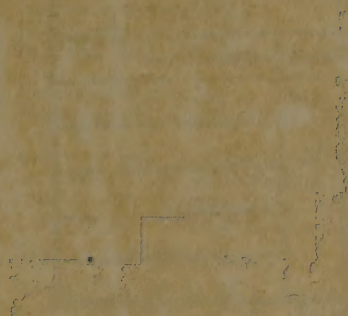




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FOOD AND SANITATION.

INDEX TO VOL. IV.

From January 1, 1894, to June 30, 1894.



- ADULTERATION : Cost of prosecutions in Glamorgan, 198; Deputations, 139, 163; In America, 99, 162; In New Zealand, 187; Local Authorities and the Acts, 8, 14, 15, 45, 47, 51, 66, 93, 107, 110, 126, 158, 163, 164, 171, 181, 183, 186, 188; Select Committee on, 176, 187, 204.
- Agriculture, The Decay of, 80.
- Alcohol, Sophistication of, 116.
- Analysts : Action Against, 189; Appointments, 18, 34, 39, 40, 47, 63, 71, 82, 83, 86, 98, 101, 106, 116, 126, 168, 171, 182; Councils and their Analysts, 185, 207; Form of Certificates, 32, 180; Impostor, 181; Reports, 47, 53, 56, 60, 66, 77, 80, 83, 88, 99, 116, 123, 126, 144, 151, 152, 156, 167, 168, 182; Society's Dinner, 27; Testimonial to Mr. J. C. Bell, 184.
- Appointments Vacant, 56, 63, 72, 80.
- Arsenious Acid in Animal Organism, 69.
- BABY'S Exhibition, 170.
- Baked Potato, Chemistry of a, 138.
- Baking Powder, 28, 29, 30, 44, 52; How to make, 62.
- Barber's Shop and Infection, 134.
- Beer : Bass's, 60, 179; Belgian Regulations, 98; *British Medical Journal* on, 3, 8; Chamber of Agriculture and, 13; Dilution of, 199; Ingredients in, 45, 102; Observation of Drinkers, 61; Statistics, 154; Temperance Beers, 140.
- Beeswax, Adulteration of, 36.
- Beetroot, Cultivation of, 82.
- Beverages, Popular, and Public Health, 133.
- Birmingham Sewage Farm, 110.
- Bismuth Poisoning, 37.
- Borax, Poisonous Effects, 3.
- Boric Acid, Use of, 82.
- Bovril Libel Actions, 82, 181.
- Bread, Advantages of New, 207.
- British Food Supply, Foreign Sources of, 4, 173.
- Butter and Margarine : Adulteration at Bath, 198; American Law, 15; Bogus, 98; Colouring, 77; Commission Demanded, 63; Danish, 5, 24; Danish Law, 67; French Law, 15, 47; Interview with Mr. Hudson, 71; Merchant and Retailer, 51; New Zealand, Imports from, 13; Ostend, 43; Press on, 107, 134; *v.* Substitutes (see also Leading Articles), 108, 124, 132, 138, 169, 194; Water in, 20, 22, 28, 34, 46, 54, 55, 91, 153, 164, 206.
- CANADIAN HONEY, Adulteration of, 183.
- Carbolic Acid, Sale of, 75.
- Carbon Dioxide and Ventilation, 39.
- Cheese : As Brain Food, 66; Curing of, 59.
- Chelsea Hospital, 85.
- Children, Rules for Treatment, 197.
- Cholera Microbes in River Elbe, 107.
- Church and Sanitation, 24.
- Cigars, Mode of Doctoring, 116.
- Cocaine, Adulteration of, 117.
- Cocoa, Appeal Case, 78; Messrs. Cadbury's Works, 71; Messrs. Van Houten at World's Fair, 4.
- Coffee : Effects on Digestion, 53; Substitute for, 207.
- Cognac and Cool Storage, 117.
- Condiments, Adulteration in States, 196.
- Confectionery, Objectionable Practices, 84, 140, 199.
- Congreve Consumption Remedy, 93.
- Co-operation : Conferences, 72; Employé's Wages, 194; Notes on Societies, 31, 131; *v.* Private Traders, 67.
- Correspondence : Answers to Correspondents, 24, 34, 35, 64, 88; Durham City and the Acts, 56; Filth Fed Fish, 200; German Whiskey, 184, 192; "Keeley" Gold Cure, 168; Lard Shippers' Weights, 31; London Milk, 176; Maybrick Case, 96; Margarine Samples, 8; Sweet Milk Standard, 208; Samples by Post, 144, 152; Vinegar, 64; Warranty Givers, 112, 117; Water in Butter, 16, 31, 38; Yeast, 112, 168.
- Councillor as Medical Officer, 91.
- Cough Mixture, Poisoning by, 176.
- Craufurd's Hotel, 72.
- Cream, Ripening by Bacteria, 149.
- DAIRY Legislation in America, 4.
- Digestion of Living Tissue, 138; Without Ferment, 187.
- Diphtheria : Dr. Thorne on, 30; Rattlesnake Story, 179; Remedy for, 36; Spread of, 184.
- Disinfection and Disinfectants : Clerkenwell Contract, 119; Disease and, 52; Hull and, 202; Railway Cars, 200; Rival Disinfecting Chambers, 62. (See also Leading Articles.)
- Drains, House, 112.
- Drugs : Cod Liver Oil, Adulterated, 59; English Drugs Rejected, 77; Ipecacuanha Adulterated, 83; Ridiculous Fines on Chemists, 31.
- Dry Closet System, 86.
- Dulcin, 172.
- EGGS, Preservation of, 80.
- Electrical Science, 205.
- Essential Oils, Adulteration of, 173.
- FANGIER-GENESTELLE Mineral Waters, 96.
- Fish Offal, Utilisation of, 110.
- Flies and Contagion, 52.
- Food Reform, 155.
- Fruit, Liability of Brokers, 16, 120, 150, 174.
- GELATINE as food, 141.
- Gin, Hollands, 60.
- Ginger declared not an article of food, 177; Spent Ginger Fraud, 24, 44.
- Glycerine, Arsenic in, 10, 116. (See also Leading Articles.)
- HENDON HOSPITAL, 80.
- Human Ostrich, 140.
- ICE, Artificial, 77.
- Ice-cream, 205.
- Infant with a Tail, 116.
- Infection from Non-Contagious Diseases, 84.
- Inspection Notes, 39.
- Inspectors : Association Dinner, 46; Dinner of, 91.
- Interview with Mr. Kearley, M.P., 165.
- Inventions : Cab Improvements, 136; New Bottle, 44; Nibestos Filter, 164; Poison Bottle, 181; Rollason's Wind Motor, 144.
- KEELEY Gold Cure, The, 154.
- LAGER Beer, 35, 43, 77.
- Lard : American Dodge, Latest, 195; Appeal Case, 18, 27; detection of Cotton Oil, 72; marking, 104; Provision Dealers on, 116; Somerset House, and, 21; Warranty Point, 59; West Sussex County Council and, 162; What Lard is, 92, 100.
- Laundry Apparatus, 200.
- Lead Poisoning, 47, 182.
- Leading Articles : Adulteration Laws, 33, 137; Agriculture and Adulteration, 193; Anti-Vivisectionists, 81; Arsenic in Glycerine, 65; Board of Trade, 17, 169; Budget, Beer, and Spirits, 121, 129; Butter, Hamburg, 153; Butter *v.* Substitutes, 49, 97, 113; Disease and Disinfectants, 9; Drugs, Sale of, 105; Fertilisers Act, 89; Gin, 41; Government Analysts, 201; Hermite Process, 73; Inland Revenue Dodgery, 57; Lard, Somerset House and, 25; Merchandise Marks Amendment, 185; Parliament, Adulteration and Somerset House, 161; Stead at Chicago, 2; Trade Journals and Enterprise, 145; Somerset House and Vinegar, 177.
- Liquor Carnis Co., 187.
- Liquorice, 107, 194.
- MATTEI : Chinese Rival, 63; Lady Somerset on, 21.
- Maybrick Case, 10, 37, 48, 96.
- Meat : Appeal Case, 24; Australian, Preparation of, 4; Extracts, 187, 195; Seizure and Surrender, 46; Symptoms after eating unsound, 14.
- Merchandise Marks, 79.
- Mersey, Pollution of, 136.
- Methylated Spirit, Dangers of, 39.
- Microbes : and Disease, 184; Bob Burdette's Breakfast, 63; in Air, 200; in Ironclads, 190; In Railway Carriages, 158; Influence of Soil upon, 190; Plague of Bacilli in a Pantry, 18.
- Milk : Adulteration methods, 67; Amendments required in Law, 148; Appeals, 78; Arsenic in, 187; Brain Food, 66; Condensed, 32, 70, 88; Disease and, 101, 125, 174; Fat Percentage, 190, 204; Glasgow Dairy Co. Ltd., 24; Registration of sellers, 164; Sterilisation of, 72, 168; Supplies in Various Towns, Notes on, 14, 64, 138, 147, 198; Water in, 34, 35; Workhouse supplies, 163, 167, 201.
- Morphine, Antidote to, 55, 84.
- Mustard, Adulteration of, 204.
- NELSON, Morris & Co, 118.
- Nitrogen, Assimilation of, 176.
- Oakey & Sons' Report, 66.
- Obituary : Mr. Allender, 3; Dr. Hill Hassall, 123.
- Oils : Beech Nuts and Linden Seed Products, 53; Cottonseed, 69, 83; Flash Point of Mineral, 40, 184, 194; Linseed Adulteration, 66, 86; Olive Adulteration, 36; Peanuts, from, 148; Specific Gravities, 96; Tax Suggested, 155.
- PARIS, Food Inspection in, 19.
- Patent Medicines : Analysis of, 101, 117, 146; Powell's Balsam, 178; Sale of, 27, 53; Secret Remedies, 66.
- Pepper Swindles, 155.
- Phenated Lime, 122.
- Poultry Fattening, 150.
- Preservative : A new, 99, Use of, 133.
- Prosecutions, Baking Powder, 16, 44.
- Brandy, 71, 142.
- Bread and Cake, 107, 134, 181.
- Butter and Margarine, 2, 4, 5, 6, 7, 11, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 28, 31, 34, 37, 40, 43, 44, 52, 55, 67, 75, 82,

87, 91, 94, 95, 98, 103, 107, 110, 112, 116, 119, 120, 123, 126, 135, 139, 141, 151, 152, 158, 161, 162, 163, 167, 168, 171, 172, 179, 180, 183, 186, 187, 189, 192, 198, 202.
 Buttermilk, 36, 163.
 Cheese, 58, 59, 179.
 Cocoa, 6, 67, 146.
 Coffee, 15, 29, 94, 167, 169, 174, 178, 198.
 Confectionery, 40, 188.
 Cough Lozenges, 107.
 Drugs, 6, 24, 54, 183, 186.
 Fish, 38, 157.
 Gin, 110, 142, 155, 171, 203.
 Ginger, 29, 36, 51, 74, 126, 133, 142, 188.
 Lager Beer, 43.
 Lard, 36, 37, 55, 58, 59, 79, 87, 95, 104, 123, 154, 172, 179, 198.
 Liquorice Powder, 170.
 Meat, 2, 14, 43, 54, 86, 94, 141, 146, 170, 182, 198, 199, 201.
 Milk, 2, 7, 15, 16, 27, 29, 30, 36, 40, 47, 55, 87, 95, 110, 112, 120, 126, 131, 134, 135, 136, 141, 147, 150, 151, 152, 158, 161, 162, 166, 167, 168, 169, 170, 171, 176, 178, 180, 181, 182, 186, 187, 188, 194, 198, 199, 201, 203.
 Mustard, 40, 88, 151.
 Oatmeal, 63.
 Olive Oil, 136.
 Pepper, 16, 36.
 Rum, 36, 110, 155, 180.
 Spirits of Nitre, 116, 182, 197.
 Sugar, 141, 158, 198.
 Vinegar, 6, 7, 15, 18, 20, 68, 75, 116, 180.
 Whiskey, 6, 7, 14, 47, 126, 134, 136, 142, 151, 155, 174, 186, 190, 199, 203.
 Yeast, 16, 93, 103.

RESTAURANTS, Adulteration at, 130, 141, 158, 167, 171, 172.
 Reviews, 126, 131.

ST. ALBANS Infirmary, 200.
 Salicylic Acid, Dangers of, 83.
 Samples, The taking of : Appeal Case, 88 ; L. G. B. on, 86 ; Refusing to sell, 2, 14, 18, 151, 127 ; Sunday Collection of, 135.
 Sanitary Conference, 42.
 Sanitary Notes, 63.
 Sanitas Company's Meeting, 86.
 Sausage Rolls, 77.
 Sausages, Weight-making Casings, 155.
 Sewer Air, 200.
 Sheep Dip, 58.
 Sherry, "British," 116.
 Slag, Adulteration of, 172.
 Somatose : New Food Product, 69.
 Somerset House : (See Also Leading Articles) ; Amalgamation of Excise and Customs, 110 ; Milk Analysis, 3 ; Post of Principal, 28 ; Standards Wanted, 94 ; Sir W. Lawson on, 122.
 Soothing-Syrup, Morphine in, 122.
 Southampton, Medical Officer's Report, 206.
 Spirit Notices, 203.
 Stead, Mr. W. T. (See also Leading Articles), 16, 93, 116, 202.
 Street Cars, Propulsion of, 136.
 Sugar, Artificial, 122 ; Colouring of, 186 ; Food Value of, 42, 100.
 Swine Fever, 119.

TEA : Adulteration of, 36, 204 ; Effects on Digestion, 53 ; Lead Poisoning from, 93 ; Re-firing, 45.

Tinned Foods : Lobster, 172 ; Meat, 205 ; Poison from Tin, 4 ; Preservatives, 82 ; Salmon, 80 ; Tomatoes, 194.
 Tobacco : Adulteration of, 118, 122 ; Ill Effects of, 68, 76.
 Treacle, Zinc Poison in, 123.
 Trichinae, 31.
 Typhoid Fever and Bad Air, 192.

VENTILATION : House of Commons, 144 ; Influence of Temperature, 144.
 Vinegar : Application Against FOOD AND SANITATION, 37 ; Champion & Co.'s Libel Action, 120 ; Navy Contract, 99, 112 ; Mr. Pattinson on, 44 ; Somerset House and, 147 ; What it is, 101 ; 3,500 gallons turned into sewers, 164.

WALL paper, Effect on light, 154.
 Warranty question, The, 98, 135, 141, 154, 182, 198, 203.
 Water : Analysis of, 78, 138, 156, 207 ; Filters, 85 ; Method of Sterilising, 184.
 Weights and Measures : Bread, 126 ; Frauds in Oil Trade, 83 ; Milk Churns, 170 ; Unjust Scales, 36, 87 ; Unstamped Instruments, 37 ; Weighing paper, 78, 186.
 Whiskey, 18, 172, 207.
 White Lead, 207.
 Wines : Poisoning by Home-made, 14 ; Potato Wine, 139.
 Worcester Sauce, Imitation of Lea and Perrins', 186.
 Worthing, Sanitary Condition of, 136.

YEAST : Sequel to Baking Powder Decision, 93 ; Starch in, 126.

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1894, toROBERT MACDONNELL,
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December 21st, 1893.

Food and Sanitation.

SATURDAY, JANUARY 6, 1894.

DISGRACEFUL CONDUCT OF MR. W. T. STEAD
AT CHICAGO.If any of our readers think our exposures of W. T. Stead
marked by any unnecessary severity, we commend the follow-
ing to their notice, taken from the *Daily Telegraph* of December
29th:—Chicago, December 28th.—Mr. William T. Stead has become in-
volved in a Chicago unpleasantness. In a speech which he made
yesterday before the Women's Club, a highly respectable society, and
which was largely attended by the fair sex, he said: "I am glad of
the opportunity to appear here because I see before me the most dis-
reputable women in the city. I say this because the most disrepu-
table are they who, having been favoured by Providence with all her
bounteous gifts, yet live entirely for themselves. Such women are
worse than the most abandoned creatures in the streets." The ladies
rose indignantly and protested, and there is a probability that
the remainder of Mr. Stead's visit to Chicago may be somewhat dis-
turbance.—*Dalziel*It seems strange that, after so odious and blackguardly an
insult, Stead should be allowed to still pose as a decent person
in Chicago, and that before the husbands, fathers, or brothers ofWHEAT PHOSPHATES Nourish Brain and Frame, Form
Bone, Teeth and Muscle, and Enrich the Blood.TRADE MARK
FRAME FOOD DIETIs the only Food
which contains theWHEAT PHOSPHATES extracted from Wheat Bran, and is
therefore the most NOURISHING food in the WORLD.For **INFANTS**: Developing Bones, Muscles, Teeth, Brain;For **INVALIDS**: Restorative and Invigorating; retained by the
weakest stomach when all other food is refused.For **ADULTS**: A Delicious Breakfast and Supper Dish;
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Highest Awards, Healtheries, London, 1884.

LONDON, 1893 (this Year).

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Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds,
and Skin Ailments quickly relieved by use of**CALVERT'S CARBOLIC OINTMENT,**

Large Pots, 13d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calverts'
Ointment. It is the best general Ointment with which we are
familiar, and ought to be a stock remedy in every household."Private report from Limassol Cyprus: "I have never found any
thing to come up to it for neuralgic and 'Rheumatic Pains.'"

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F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

the ladies so shamelessly subjected to his disgraceful pruriency.
They manage such matters differently in New Jersey. A rev-
iminator of Stead at Millville recently said—"When you are dealing with saloon-keepers you are dealing with
the meanest, most disreputable, heartless, feelingless, despicable,
diabolical set of scoundrels that God's sun ever shone upon. They
are willing to sell themselves and their neighbours for a dollar." A
saloon-keeper's daughter read the newspaper report of the minister's
speech, and determined to let that gentleman know what she felt.
Having purchased a whip, she then went on a hunt for the preacher,
and came across him on High-street, and accosted him with the
words:—"You are the man that made the remarks about my father at the
temperance meeting?"

"Yes," replied the minister.

"You lied about him!" retorted Katie.

"If you want to talk about that you must come to my house," was
the answer. The girl then gave the reverend traducer of her father
a well-deserved thrashing until he snatched the weapon from her
hand. A crowd had collected in the meantime, and amid their
ringing cheers she made her way home.In a "New Year's Greeting" to the readers of the *Review of
Reviews*, dated "Chicago, December 18th," Mr. Stead, under the
heading "Exit the *Daily Paper*," acknowledges that he must,
perforce, forego his aspiration in the direction of the issue of the
Daily Paper:—"Writing in November, I remarked that before Christmas I should
have received my marching orders, and whatever they were, I should
be well content. Christmas is not quite here, but in one respect my
marching orders are to hand. I have not to establish that *Daily
Paper*. I am to go on editing, as before, the *Review of Reviews*.
What else I have to do is not yet clear. But I remember the wis-
dom of Ali's saying, which I have quoted so often, 'Thy lot in life is seekin

after thee; therefore, be thou at rest from seeking after it'—and I rest assured that the positive word of command will reach me in terms as precise and in accents as unmistakable as the negative order which bids me announce the exit of the *Daily Paper*.

"I have to thank the thousands of friends and subscribers who showed their confidence in me, and their desire to support my scheme by sending in their subscriptions. These have already been returned, as they do not reach the stipulated number of 100,000."

To the last Stead cannot refrain from exhibiting his shameful hypocrisy, and parading sentiments that are about as fitting on his lips as they were on those of Joseph Surface and Pecksniff—characters which find in W. T. Stead their perfect living realisation. We have one gratification, however, as the result of our exposures, in the fact that we have smashed W. T. Stead's *Daily Paper* confidence trick.

If the Public Prosecutor were a reality instead of a costly farce, a prosecution of the Mattei swindlers would at once take place, and with such a prosecution there would depart for ever any claim W. T. Stead could advance to be other than what we have described him as being.

ENFORCING THE ACTS AT BRADFORD.

At Bradford, on Dec. 22nd, James Newland, described as a hawker, of Leeds, was charged under the Margarine Act with selling margarine without having previously attached the necessary label. One of the Corporation Inspectors deposed to having watched the defendant, and having been told that he had sold margarine as butter. On asking to be supplied with a pound of butter, the defendant said, "It is margarine." The Inspector bought a pound, and had a portion of it analysed, with the result that it was found to be margarine. It had no label indicating that it was margarine. The defendant pleaded guilty, and asked the Magistrates to be lenient with him, and he would never do it again. He was out of work, he said, and his wife was ill. A witness was called, who stated that he bought a pound of "butter" from the defendant for a shilling. Asked if he expected to get fresh butter at a shilling a pound, he replied that his wife tasted the butter and said that "it tasted nice" (laughter). In reply to a further question, he said he had only been housekeeping for seven or eight months. The Chief Constable (Mr. Withers) said that the defendant had some rolls made up like Otley rolls, with butter at the ends and margarine in the middle (laughter). Mr. Skidmore said this was evidently a bad case, and he should inflict a fine of £2 and the costs, 17s., with the alternative of a month's imprisonment. The defendant was then further charged with hawking in the streets of Bradford without a licence. The defendant said that he was not aware that it was necessary to get a licence. In Leeds anyone could hawk fish and perishable goods without a licence, and he thought it would be the same in Bradford. A reference to the law-books showed that ordinarily fish and other perishable commodities are exempted from the list of goods for the hawking of which a licence is required, but Bradford is one of the few places where a licence is necessary under a local Act. The Chief Constable pointed out that this regulation was a salutary one, as people like the defendant would be able to go into other people's shops and houses for the purpose of discovering the best means of committing robberies. The defendant knew very well that he would not be able to get a licence. Mr. Skidmore decided that in this case he would under the circumstances allow the defendant to go on payment of costs. The defendant: How much will that be altogether? I shall be able to pay £3 (laughter). I sold everything up to get that this morning. The costs in the second case were reduced to 2s., and the defendant having paid the amount of his fine and costs, £2 19s., left the court.

MARGARINE—HEAVY FINE.

At the Stipendiary's Court, Tunstall, on December 21st, Mr. John Price Jones, grocer, of Longbridge Hayes, was summoned for an offence under the Food and Drugs Act, for selling butter not of the nature, substance, and quality demanded by the purchaser. Having heard the evidence, the Stipendiary said the case was a very bad one, and he did not believe the substance was supplied in accident. He inflicted a penalty of £10 and costs, and fined defendant 20s. and costs for a second offence, in not having wrapped the margarine in paper marked "margarine."

SUTTON-IN-ASHFIELD GROCER HEAVILY FINED.

Mr. James Francis Bray, grocer, trading as the Liverpool Stores, Sutton-in-Ashfield, was charged at Mansfield, on December 21st, at the instance of Colonel Story, with having sold an article purporting to be butter, but which contained a large percentage of margarine, on the 18th ult. Mr. Fidler represented the defendant. For the defence it was stated that defendant, in consequence of the snow and rain beating into the shop, was in the act of cleaning up when the girl entered. The tickets had been removed from the heap of butter and margarine, and the article supplied to the purchaser was quite a mistake. Fined £10, including costs.

IMPORTANT POINT OF LAW AT SHEFFIELD.

At Sheffield, on December 22nd, Alfred Crookes, milk seller, 496, Attercliffe-road, was summoned at the instance of the Corporation for having refused to sell to John Gibson, an Inspector under the Food and Drugs Act, a sample of milk for analysis. The Deputy Town Clerk read the 17th section of the Food and Drugs Act of 1875, which constitutes it an offence for a person exposing for sale or retail any article coming within the meaning of the Act to an officer requiring it for the purposes of analysis; and also the section of the amending Act of 1879, which extends the operation of the principal Act from shops, &c., to the streets. He said that with regard to the law of the matter, a case had been decided in the High Court of Justice which placed it beyond doubt. It was a case in which a publican appealed against a conviction for refusing to serve a constable with rum for an analysis out of a specified vessel; but the High Court held that the conviction was right, and must be upheld—that an Inspector was entitled to be served, for the purposes of analysis, out of a vessel from which he had been served. John Gibson, the Inspector, stated that he met the defendant in Attercliffe-road, on the 23rd November, carrying two milk cans. He asked the defendant what kind of milk he was selling. He declined to say, and the Inspector tendered twopenny for a pint of new milk from one of the cans which he specified. The defendant, however, refused to sell milk from that particular vessel. Inspector Jackson corroborated this statement. The defendant said he was prepared to sell the Inspector new milk out of the vessel in which new milk was contained, but as a matter of fact the can from which the Inspector wished to have new milk contained old milk, and he told him so. He also alleged trickery and prejudice against Gibson. The Stipendiary told him that was all the more reason why he should be careful. The defendant was sworn, and said it was his custom to carry new milk and old, and to sell it at different prices. The Inspector demanded new milk out of the old milk can, and it was impossible for him to supply it. The Stipendiary pointed out that there was a difference between this case and the case quoted by the Deputy Town Clerk. In the appeal case the Inspector had been served with a glass of rum to drink, and he asked for the rum for analysis out of the same vessel, and that was the demand which was refused. The Deputy Town Clerk said he regarded the point as immaterial, he took it that the note to the case, which he had read, meant that an Inspector was entitled to be served out of a specific vessel. The point was argued at some length, the Stipendiary expressing the view that the evidence in this case went no further than to show that defendant refused to say that it was old milk in this particular vessel. If any evidence could be brought to show that the man had refused to sell new milk, or that he had sold milk out of the old milk can as new milk, he would adjourn the case for the production of it. The Deputy Town Clerk said he could carry the case no further. If the defendant had been straightforward, and had said to the Inspector, "I will sell you this milk as skimmed milk," it would have been analysed as skimmed milk, and no offence would have been committed. The Stipendiary told the defendant that he had done foolishly in not telling the Inspector that the can held old milk, but the case would be dismissed.—Peter Fitzsimmonds, milk seller, 9, Westbar-green, was summoned for having sold milk which had been deprived of one-third of its cream. Mr. Sayer again prosecuted; Inspector Gibson stated the facts. The defendant said he could only account for the absence of the cream by the neglect of the girl to mix up the milk as she sold it out in small quantities. The Stipendiary inflicted a fine of 30s., including the costs.

DISEASED MEAT AT YORK.

At the York Police-court, on December 28th, Arthur Styan, pork butcher, Walmgate, was summoned for having had in his possession diseased meat for sale. The Town Clerk prosecuted, and Mr. W. Wilkinson appeared for the defendant. Mr. J. Atkinson, Sanitary Inspector, said the defendant had had a stall in the market for some years. Accompanied by a veterinary surgeon, he visited a slaughterhouse occupied by John Ward on the 8th December, and found the carcase of a pig dressed for sale. It was diseased and unfit for food. He seized the carcase, and afterwards saw the defendant, who said the carcase was his, and quite fit for food. The following morning the carcase was seen by a Magistrate, and an order made for its destruction. Mr. William Fawcington, Veterinary Inspector, said the carcase was unfit for food. He was of opinion that the animal had suffered from chronic dropsy. Dr. Raimes, Rural Sanitary Medical Officer, also deposed that the carcase was totally unfit for human food. Mr. Wilkinson, for the defence, contended that there was no indication of disease of the pig. Mr. G. T. Rickering, Veterinary Surgeon, said he examined the carcase, and came to the conclusion that the pig was fit for food. The defendant having on two previous occasions been convicted of similar offences, he was sent to prison for 21 days' hard labour, and ordered to pay the costs.

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"THE BRITISH MEDICAL JOURNAL" ON BEER.

We commend to any who may be of the *British Medical Journal's* opinion, as expressed on December 23rd, the letter of Mr. Otto Hehner in another column, showing how fallacious are the arguments of our contemporary. We must confess to a feeling of surprise at seeing the *British Medical Journal* adopt this attitude upon the Beer question. It is incontrovertible that the beer drinker who purchases by retail a glass of beer, does so almost invariably under the belief that he is buying the product of malt, hops, water and yeast. Under the Food and Drugs' Act it ought to be in law, as it is in fact, an offence to sell the product of malt and hop substitutes for the genuine article, inasmuch as it is not of the "nature, substance and quality demanded," but here the Inland Revenue Authorities step in and stultify the Act, and as all acquainted with brewing well know, beer may be anything, and is made so by Act of Parliament. Were 43 and 44 Vict., or any similar discreditable Act of Parliament to define hog-wash to be milk, or cottolene to be butter, we do not suppose the *British Medical Journal* would be satisfied that the substances were respectively milk or butter, and that it would be other than a grave scandal that they should be sold as such. Yet the practice is on all fours with that of vending as beer, substances not the product of malt, hops, water and yeast. Wenotice that our contemporary in its last issue takes the Bishop of Durham to task as follows:—

DRINK OR ADULTERATION.

The Bishop of Durham, speaking not long ago, 'said he thought they should try a temperance publichouse something of the nature of that described by the Bishop of Chester. His idea was to have a publichouse where good beer should be sold along with non-intoxicants. He would rigidly exclude wines and spirits. The more he examined the question of drunkenness the more he was convinced that it was due to the use of adulterated beer and spirits. All the brutality that made drunkenness so hideous was due to adulteration. We shall be glad to know on what authority this statement is made. It may be said that the accomplished prelate who expresses this opinion has been misrepresented in the report which is before us; while, on the other hand, the results of investigation at Durham may afford adequate scientific ground for the statement. The result of investigations, which we carried on with some care, precision, and extent in London, brought us to a precisely opposite conclusion. Even in the poorest and least orderly districts of London we found no evidence, from a considerable series of analyses, which pointed to any adulteration of beer or of spirits likely to promote drunkenness or to lead to brutality. The conclusion at which we arrived was that the cause of drunkenness was drink, and that the talk of adulteration being a leading factor in drunkenness or brutality is utterly misleading and not without mischief, inasmuch as it draws a red herring over the trail, hinders temperance or abstinence, and diverts attention from the real cause of drunkenness by suggesting one which, however plausible and specious, is an imaginary and not a real cause. Possibly, however, the Bishop of Durham, who is one of the most thoughtful and able of church dignitaries, has been able to obtain special information of a character to afford trustworthy evidence of the correctness of the opinions which he is reported to hold, and leading to conclusions which he is described as having drawn. In that case it would be very satisfactory to us if we could be put in possession of this set of facts.

It is a pity our contemporary did not extend its enquiries a little farther afield. It might have chanced upon a beer for example, well known in Liverpool as prepared for the "dock wollopers" which, if the *British Medical Journal* declared it other than of vile quality it would probably share that opinion with only one person in Liverpool, the brewer of the "long pul swill." We are afraid the *British Medical Journal* has yet something to learn about beer.

OBITUARY.

By the death of Mr. G. Mander Allender, who, whilst on a visit to Monte Carlo, was robbed and murdered. English dairy farming loses one of the very few men who have had not only enlightened views, but also the capacity to grasp the causes that have been ruining English dairy farming. Mr. Allender, however, had more than these qualities. He believed that English dairy produce excelled that of any country in the world, and what is better, he proved it. The Aylesbury Dairy Company, Limited, founded by Mr. Allender in 1868, has done more for honesty in dairy farming than even our Government has done, for whilst Somerset House blundering, food analysts were groping over their fearfully inaccurate milk analyses that have earned them the derisive laughter of the whole capable scientific world, thousands upon thousands of milk analyses were being quietly conducted in the Aylesbury Dairy Company's private laboratory by Dr. P. Vieth. Those analyses showed that average milk had at least one per cent. of fat over what Somerset House for years would pass as genuine milk. They showed the Aylesbury Dairy Company that if it would stoop to avail itself of the opportunity afforded it by the Somerset House chemists' ignorance it could make an extra profit of some thousands of pounds per year, but although beset upon all sides by competitors who practiced the fraud approved by Somerset House Government chemists, Mr. Allender would have none of such trade trickery, and genuine milk with its full 3·57 or 4 per cent. fat was delivered by the Aylesbury Dairy Company, whilst its competitors took, and take still in many parts of London, as much as eight gallons of separated milk and one gallon of water, and added these to each twenty gallons of genuine milk, well knowing that the Somerset House incapable chemists will proclaim such swindling milk genuine. In all else Mr. Allender was as scrupulously honourable. Years ago, before Danish butter had gained its present footing in England, he warned English dairy farmers what the growing use of preservative would do for them, but his enlightened, far-seeing advice was unheeded until too late, and England now sees Denmark's butter trade, that 10 years ago was 30,000,000 lbs., now increased to 90,000,000 lbs. The colossal business he founded is evidence of what could be done everywhere throughout England for dairy farming if there were more who had the knowledge, the energy, and the determination Mr. Allender possessed. For a few years past Mr. Allender's health was such that he was unable to bear the rigours of an English winter, and it was whilst upon a visit to the Riviera in search of health that he was murdered and robbed whilst walking to Mentone.

SOMERSET HOUSE MILK ANALYSIS.

In the House of Commons on December 22nd, Mr. Bartley asked the President of the Board of Agriculture whether his attention had been called to the complaints made with regard to the analysis of samples of milk substituted to the Government Analysts. at Somerset House; and what steps the Department of Agriculture were taking to protect dairy farmers against the injury done to them by the low standard of quality thus officially laid down. Mr. Gardener.—The matter is not one in regard to which I possess any statutory powers, but I have from time to time brought under the notice of the Local Government Board and the Board of Inland Revenue the representations made to me on the subject. It is with those Departments that the decision in the matter must rest.

PRESERVATIVES IN FOOD.

ALLEGED POISONOUS EFFECTS OF BORAX.

The borax treatment of epilepsy has of late taken a great extension. It would appear, however, that the prolonged exhibition of a salt hitherto considered innocuous is not devoid of inconvenience to the patient, for M. Féré states that he has observed cutaneous troubles in such patients, consisting principally of seborrhœic eczema of the scalp. The hair is shed, but grows again when the administration of the borax is stopped.

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DAIRY LEGISLATION IN AMERICA.

A report from Mr. W. L. Booker, the British Consul-General in New York, to the Foreign Office, affords some interesting information as to the measures adopted by the Legislature of the State to secure the purity of dairy produce. Formerly the duty of watching over this important matter was assigned to a Dairy Commission, but the Commission was merged in the Department of Agriculture, established last spring. The duties of the Dairy Commission were to see that milk delivered at butter and cheese factories, and sold to customers, should not fall below a certain standard—in fact, that it should be perfectly pure as drawn from the cow—and that oleomargarine and kindred products should not be manufactured in this State or sold in imitation or semblance of butter, the product of the dairy. The Commissioner of Agriculture is authorised by the Act to appoint a Director of Farmers' Institutes and Assistant Commissioner, and employ such clerks, chemists, agents, and counsel as he may deem necessary for the proper enforcement of the laws and the proper administration of the department.

THE DUTIES OF INSPECTORS.

The Commissioner of Agriculture, his assistants and employees, have full access to all places of business, factories, farms, buildings, carriages, carts, and vessels used in the manufacture, sale, or transportation within the State of any dairy products, or any imitation thereof, or of any article or product with respect to which any authority is conferred on such Commissioner. They may examine and open any package, can, or vessel containing, or believed to contain, any article or product which may be manufactured, sold, or exposed for sale in violation of the provisions of the Act, and may inspect the contents therein, and take therefrom samples for analysis. The Commissioner is authorised to appoint and employ not more than five expert butter and cheese makers, who shall, under his direction, examine and inspect butter and cheese factories, and attend at agricultural fairs, societies, and meetings designated by the Commissioner, to impart information as to the best and most improved method of making butter and cheese and improving the quality thereof.

STRINGENT REGULATIONS.

The dairy interests of this State are paramount to all others, and in addition to the protection afforded consumers by the stringent regulations against the adulteration of milk, and the manufacture or sale of oleomargarine in the State, there is protection against false weights, as the manufacturer of receptacles for the purchase of butter is required before selling the same to brand it with his name and the true weight of the receptacle. There has been for some years a Cheese Brand Law, under which every manufacturer of full milk cheese may put a brand upon each cheese indicating "full milk cheese," and the date when made, and no person shall use such a brand upon any cheese made from milk from which any cream has been taken. The Dairy Commissioner, before the agricultural law of this year, and now the Commissioner of Agriculture, shall issue to the cheese manufacturers on proper application and under such regulations as to the custody and use as he may prescribe, a uniform stencil brand bearing a suitable device or motto, and the words, "New York State full-cream cheese." Every such brand shall be used upon the outside of the cheese and upon the package containing the same, and shall bear a different number for each separate factory. The Dairy Commissioner, in his last report, states that the Cheese Brand Law continues to grow in favour, and it is recognised by the wholesale dealer, the retail dealer, and by the exporters as a guarantee that the cheese is full cream whenever the brand is upon it. The Commissioner adds that the demand for State brand cheese will, in his opinion, cause every manufacturer to brand his cream cheese if full cream, and then the problem of branding skim cheese will be solved, as a cheese with no brand on it will be classed as skimmed cheese. The last report of the Dairy Commissioner gives the number of creameries and cheese factories in the State as 2,000. In some of these establishments the milk is bought and paid for by the hundred pounds; in others the milk is delivered by the patrons to be made into butter and cheese, and the profits to be divided among the patrons in proportion to the quantity of milk delivered by them. It is estimated that the milk consumed in New York is 63,250,000 gallons, besides 5,000,000 quarts of cream, and nearly 70,000 cases of condensed milk, the product of 2,973 dairies. The value of the milk, butter, and cheese is estimated at about £11,000,000.

MARGARINE AS BUTTER.

At Eddisbury Petty Sessions, on December 29th, Thomas Lightfoot, grocer, Cote Brook, near Northwich, was summoned for selling margarine as butter. The defence was that the shop boy had removed the label from the slab on which the margarine was exposed. Inspector Tummins, to whom the margarine was supplied by the defendant, asked on behalf of the County Council that a heavy penalty should be imposed, as the offence was not only a fraud upon the public, but was injurious to the staple trade of Cheshire. A fine of £10 and costs was inflicted.

HOW AUSTRALIAN MEAT IS PREPARED.

The winter months, which are our summer months, are the season of operations, the preserving process being, of course, more easily accomplished in the cool weather. At works situated on the Orara River, the season commenced in March, and up to the 20th of August upwards of 7,000 fat cattle were slaughtered. The cattle are purchased by weight, each carcass, when skinned and cleaned, passing under a steelyard, and the rates for this year were 10s. 3d. per 100lb. for best bullocks, 9s. 3d. for inferior bullocks or cows, and 8s. 2½d. for old cows. The average daily slaughter was fifty bullocks or sixty cows. The meat is cut up in small pieces, boiled in soup in scalders, strained and tinned; and the tins when soldered are packed in cases of various sizes. The tins themselves are of various capacity, from 2lbs. up, but 6lbs. is the commonest size. The soup is reduced to extract by means of a series of condensing pans, and this finds a ready market in this country. From the caul and kidney fat about two tons of butterine is weekly turned out, and the bones, offal and other refuse are boiled down for tallow, of which there are two grades. The shank and marrow bones go to England with the horns, hoofs, and tail hair; the other bones are sent to a drying shed, and in the slack season reduced to bone dust by a crushing machine at the works, and thus converted into a fine soil fertilizer. This year some corned beef has been tinned, but marrow and tongues have been treated in this way each season. There is a plant for the extraction of neatfoot oil, and no portion of the beast is permitted to go to waste save the blood. The boning of the meat is done by contract, as is also the making of the tins, the company importing the tin-plate from England and likewise the material for solder. The tinsmiths have a department of their own, fitted up with the requisite appliances peculiar to the trade. A cooper on the premises constructs the casks for tallow and butterine. A blacksmith's forge provides for the necessary ironwork and repairs, and the pine for the packing cases is cut at a circular saw bench at the works from logs that are obtained from a forest in the district some thirty miles distant. This is also a separate contract. The packing and shipping are also done by contract. In the season fully 100 hands are engaged, and the majority of them are housed in the cottages that dot the hillside in the vicinity of the works. Three engines, varying in size from 10 to 15 horse power, drive the whole of the machinery needed for all operations, and, through piping from the boilers, steam is conducted to heat condensers, retorts, scalders and butterine boilers, the whole of the pans being constructed on the "jacketer" system.

FOREIGN SUPPLIES OF FOOD FOR ENGLISH TROOPS.

In the House of Commons, on December 27th, Sir A. Acland-Hood asked the Secretary for War whether meat and flour for the troops in London, and hay supplied for the horses, were almost exclusively either foreign or colonial, and whether he would take steps to insure that in future they should be supplied from the United Kingdom.

Mr. Campbell-Bannerman said the contracts were made with contractors resident in the United Kingdom. If the articles were up to the required standard, no inquiry was made as to their origin. It was obvious that in this year much of the forage must have necessarily come from abroad. On the general question, he could not undertake to say that the supplies should be exclusively home supplies, in view of the notorious fact that the food grown in the United Kingdom was insufficient for the needs of the inhabitants, and that, if it were used for Army supplies, there must necessarily be an enormous increase of cost.

THE TINNED FOOD TRADE.

At last we are within measurable distance of the official regulation of the canning industry in America. Analyses made by the Department of Agriculture showed that every sample of canned food that had remained in the tins for any considerable length of time contained more or less of the tin or lead with which the vessels are coated, and, in pursuit of cheapness, inferior tin plates are commonly used in the canning industry. Such plates are covered with an alloy of lead and tin, the proportion of lead being in some cases as high as 13 per cent. The solder used, too, generally contains 50 to 65 per cent. of lead, which, of course, is distinctly poisonous. Both lead and the tin are readily dissolved by the acids of fruit, which is, therefore, more dangerous than meat. Some of the preservatives used in canning food, again, such as sulphurous acid, dissolve the metals, while others, like salicylic acid, are in themselves injurious. In Germany there are regulations prohibiting the use of tin plates containing more than 1 per cent. of lead for canning food.

WORLD'S FAIR AT CHICAGO.

Messrs. C. J. van Houten & Zoon, at the "World's Fair" at Chicago, have again upheld the reputation of their well-known firm. Their handsome detached building in Old Dutch style on the Michigan lake, aroused general interest. The building is of two stories consisting of six attractively furnished rooms, where twenty girls attired in Dutch costumes had more than enough to do to satisfy the requirements of the multitude of visitors. From June until the close of the Exhibition about 700,000 cups of Van Houten's Cocoa were degusted, a number never reached at any other Exhibition where the firm has exhibited. Not only did Van Houten's Cocoa receive the highest award, but Messrs. Van Houten's Exhibition Architect, Mr. G. Wijnen, received a medal for the building, the only award given to an architect for an unofficial building in the Exhibition Grounds.

DANISH BUTTER.

Whether Denmark is throwing dust in the eyes of the English buyers, and the great increase in the amount of margarine in that country is explained by the fact that the Danes are sending us as butter substances containing an admixture of margarine, or it be the truth as they say, and our Consul also alleges, that the Danes prefer to eat the margarine themselves and send us their butter, is a matter which we have our doubts about. A recent discovery at Manchester of Danish butter which was, to the surprise of the vendor, found to be margarine, strengthens those doubts. We are therefore having some investigations made as to the purity or otherwise of typical Danish butters, and shall give our readers the results of the analyses in the course of a few weeks. Meanwhile it may be noted that at present there are nineteen oleomargarine factories in Denmark. Their aggregate production for the past fiscal year was 16,313,844 pounds. The production for the last five years was: 1889, 2,121,398 pounds; 1890, 6,262,470 pounds; 1891, 10,272,051 pounds; 1892, 12,895,850 pounds; 1893, 16,512,844 pounds. In addition to this 1,905,833 pounds was imported from abroad.

Only 13,633 pounds having been exported during the past year, the home consumption has been about 18,000,000 pounds. About 8,000 firms retail this article. It is alleged that no adulteration has occurred, and that of the 800 tests made by the Government, not a single one proved the presence of any foreign ingredients.

This immense increase in the quantity of margarine produced or imported into Denmark is in itself suspicious, but when it is remembered that no Somerset House chemist is capable of accurately analysing butter and of detecting the presence of small percentages up to 10 per cent., of margarine mixed with butter, it may be that Danish butter is not the impeccable article it is claimed to be, and that this class of adulteration may be practised, and explain the peculiar increase in margarine above referred to. It is, at all events, a matter well worth, in the interests of grocers as well as the public, the inquiry we are making.

MARGARINE PROSECUTIONS.

On December 27th, at Wallasey Petty Sessions, Edward Jones, grocer, &c., 131, Victoria-road, was summoned for exposing for sale margarine to which no label was attached. Frederick Smith, assistant to Mr. Jones, was also summoned for having committed the offence without the knowledge, connivance, and consent of Mr. Jones, his employer. Mr. Rudd appeared for the defence. Mr. Hallard said on the day in question he saw on the counter of Mr. Jones's shop a large label, "Pure butter, 1s. a pound," and instructed his assistant to purchase a pound. Witness followed his assistant into the shop, and noticing that the defendant wrapped it in a margarine paper, asked him how he accounted for it being labelled as pure butter. He said his assistant must have put the label on it, and he had not seen it. A certificate was now put in showing that what was purchased was really margarine. John Bracegirdle, assistant to Mr. Hallard, said that while defendant was serving him he said it was a mixture—it was not butter. Mr. Rudd said if the offence was made out the defendant intended to bring himself under section 5 of the Act, which provided that where the offence was committed without the connivance of the defendant he could summon the real offender. He submitted, however, that the Inspector had failed to comply with the Act, inasmuch as he did not state that the butter or margarine was going to be analysed, and he did not leave a sample with the defendant. The defendant did not manage the shop himself, and had only just come over from Liverpool for a little time. There was no intention to defraud, and the defendant did not know that the label had been put on the top of the margarine. The Bench having decided to convict, the case against the assistant Smith was proceeded with. Smith's explanation was that it was a pure accident. He supposed that the piece of paper covering the label "Pure butter" had fallen off and he had not noticed it. A fine of 2s. 6d. and 9s. 6d. costs was imposed on Smith, and the case against Jones was dismissed.

Patrick Sherry, Farmers' Stores, Wheatland-lane, Seacombe, was summoned under the Foods and Drugs Act for selling an article of food, namely, margarine, which was not of the nature, substance and quality demanded, on the 25th November. Mr. J. T. Thompson appeared for the defence. Mr. Hallard said on Saturday evening, November 25th, he was in defendant's shop, and saw four lots of margarine and two lots that appeared to be butter, but were not marked. He asked for a pound of the butter which was not marked, and asked the price. The manager (Michael Sherry) said 1s. 4d., and then 1s. 2d., and then 1s. He purchased a pound and divided it, leaving a sample, and telling him he was an Inspector. Cross-examined by Mr. Thompson, the inspector said he was not told it was a mixture. He asked if it was Irish butter, but he could not say what he was told. He had a suspicion that it was not butter he was purchasing, and therefore he practically got what he intended to get. John Bracegirdle having given corroborative evidence, Mr. Thompson said his contention was at the time the purchase was made that Mr. Hallard asked for a pound of butter, and also asked the question, "Is it Irish butter?" The reply was given to him by the manager that it was a mixture. Mr. Hallard admitted that the question was asked, but did not remember the answer. Michael Sherry, the manager, said Patrick Sherry

only came there occasionally. Mr. Hallard asked if it was Irish, and witness said it was Irish mixture—that was a mixture of margarine and butter. John Quinn, assistant, corroborated, and the Bench decided to give the defendant the benefit of the doubt, and not to convict. There was a further summons against Patrick Sherry, for selling to a little girl named Maggie Fletcher, a packet containing margarine, which was not properly labelled. Evidence was given that the little girl was sent in by the Inspector for half a pound of margarine, and that the assistant, John Quinn, supplied it to her in plain paper. Quinn was summoned by his employer under the 5th section, and it was proved that written instructions had been given to the assistants, and that there was a supply of margarine paper in the shop. The Magistrates decided to fine Quinn 20s., and 9s. 6d. costs. A third summons was heard against Patrick Sherry, for exposing margarine for sale in the shop without a proper label. The evidence given in the first case was repeated. It was proved that Patrick Sherry had provided proper labels, and Michael Sherry, the manager, was therefore held to be responsible, and was fined 40s. and 9s. 6d. costs.

THE INTERNATIONAL TEA COMPANY'S BUTTER.

UNSUCCESSFUL PROSECUTION AT WOODBRIDGE.

At Woodbridge Petty Sessions, on December 27th, William Edward Coates, manager of the Woodbridge branch of the International Tea Company, was charged with selling adulterated butter on November 6th. Superintendent Hubbard having been sworn, Mr. Walter Beard (Messrs. Thomas Beard and Sons, London), who appeared for the defence, took objection to the summons, as being bad in form and law. It stated that Police-Supt. Alfred Hubbard made the charge as Inspector under the Food and Drugs' Act, whereas no Inspector could be appointed under that Act. Then, according to the 10th section, a summons with reference to a perishable article (and butter, Mr. Beard contended, came under that head) must be issued and served within 28 days of the article being purchased, instead of which 40 days had elapsed, the butter being bought on November 6th, while the summons was dated 16th December. The same section stated that particulars of the adulteration should be given, but no such particulars were given on the summons, and he had no means of knowing what charge he had to meet—whether it was considered to be adulterated with water, foreign fat, or anything else. Mr. Beard quoted a case bearing on the points he had raised, and asked the Bench to dismiss the case. The Magistrates retired to consider Mr. Beard's three objections, and on their return, the Chairman said they considered any police-constable could lay the information, and they did not consider all butter perishable, but with regard to the third objection particulars ought to have been stated on the summons, and on that ground the case would be dismissed. Mr. Beard said he believed this was a County Council prosecution, and he applied for costs against the Committee of the Council, which had authorised such prosecutions. The application was refused.

The analysis of this butter was, fat, 74.02; curd, 0.93; salt, 5.13; water, 19.92—100.00, Sp. gr. of fat at 100 deg. F. 912 deg. 6.

I am further of opinion that the same was deficient of fat to the extent of at least six per cent. The case, therefore, was really one of selling excess water as butter, for which convictions have been the case in Ireland and in parts of England, and it was dismissed through a flaw in the summons.

EXCESS WATER IN BUTTER.

Caroline Row, of Perranwell, was summoned at East Kerrier Petty Sessions, on December 27th, for having sold to Superintendent Beare butter adulterated with 4 per cent. of water. Mr. R. Dobell, solicitor, Truro, drew attention to the wording of the summons, which said that the butter was adulterated with 4 per cent. of water, whereas the Analyst's certificate contained the additional words, "4 per cent. of water above the maximum allowed by the Somerset House authorities." He was informed the maximum was 19½ per cent., and genuine butter had been found to contain as much as 22 per cent. of water. A case would be tried at Manchester next month before the High Court, which would bring the question of water adulteration to a satisfactory issue to all parties. Under the circumstances, the Bench adjourned the case pending the decision at Manchester.

At the Tipperary Petty Sessions, on December 22nd, Sergeant William Flynn summoned William Kiely, jun., on a charge of exposing for sale in the Butter Market, Tipperary, butter adulterated with an over percentage of water for the purpose of fraudulently increasing the weight and bulk contrary to the provisions of the Food and Drugs Act of 1878. The sergeant, who is the Inspector in Tipperary under the the above Act appointed by the Grand Jury, deposed that he purchased a quantity of butter from the defendant, and had it analysed in the usual way. The certificate sent down by the Public Analyst was that it contained 3.05 per cent. of water over and above the legal standard, which was 16 per cent. Mr. Hogan, solicitor, appeared for the defendant, whose wife was examined, and said the butter being very strong she had put extra pickle on it. A fine of 5s. was imposed, together with 7s. costs. Mr. Bell said these people were doing other people harm besides themselves, for they were giving the market a bad name. Colonel Tynte said Mrs. Kiely had better tell her husband he was liable to a penalty of £5, which would be imposed if he came up before the Magistrates again.

NOTICE TO READERS.

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COCOA ADULTERATION PROSECUTION AND MARGARINE PROSECUTION AT ROCHESTER.

At Rochester County Police-court, Messrs. Croft and Church, grocers, Northfleet, were summoned by Superintendent Lacy. Police-constable Payne stated that he went to the shop of the defendants, at the direction of Superintendent Lacy, and purchased a quarter of a lb. of cocoa for 1½d. An assistant served him, and he told him that he had purchased the article for analysis, whereupon the young man put a label upon the paper in which he had wrapped the cocoa, stating that it was a mixture of wholesome ingredients. When he asked for the cocoa he did not fix any price. Superintendent Lacy stated that he followed the constable into the shop, and finding that he had been served, proceeded to divide the articles into three parts, one of which he left with the defendants, another he took to the County Analyst, and the other he now produced. The certificate he had since received from the Analyst showed that it consisted of 60 per cent. of cocoa, and 40 per cent. of starch and sugar. Mr. Cross, solicitor, of Bristol, instructed by the manufacturers, defended, and contended that the certificate was bad, as on the face of it was a reprint statement that a "change had taken place in the constitution of the article that would interfere with the analysis." Major Budden pointed out that cocoa was not a substance liable to decomposition. Mr. Cross: Admitted; therefore there was no necessity for such a statement upon the certificate. Superintendent Lacy showed a blank space was left which in another certificate was filled up with the word "No." The Bench stated that they had no doubt it was a slip on the part of the Analyst; but of this they would give the defendants the benefit and dismiss the case. Mr. Cross asked for costs, but the Magistrates declined to grant them.—William Young, grocer, Northfleet, was summoned for having on the 18th November, sold to Superintendent Lacy, to his prejudice, a certain article as butter, which comprised 75 per cent. of foreign matter, and 25 per cent. only of butter. He was also charged with having at the same time and place unlawfully infringed the Margarine Act by not having labelled the article sold "Margarine." He was further charged with selling as coffee a mixture which was 72 parts coffee and 28 of chicory. Defendant pleaded guilty, and explained that it was occasioned through his shopmen not properly understanding the law and by an accident; not with any intention of deceiving the public. Fined £1 and 10s. for the adulterated butter, and in each of the other two cases 10s. and 8s. costs. The whole of the fines were paid by the defendant's manager who had charge of the branch establishment at which the offences had occurred.

At the Brentford Petty Sessions on December 23rd, before Mr. G. Mackintosh (in the chair), and other Magistrates, Thomas Macleod, a grocer, of Midsummer House, Staines-road, Hounslow, was summoned for having sold to Mr. Tyler, Inspector under the Food and Drugs Act, butter containing 80 per cent. of foreign fat, and also for having unlawfully sold margarine by retail without a wrapper bearing the word "margarine" in large capital letters. Defendant pleaded guilty to both offences. Mr. Tyler, having produced the Analyst's certificate, stated that he had frequently purchased butter at a shilling a pound, the price he paid for the article which was the subject of these proceedings. He was served, he said, by the defendant's daughter, and believed she honestly thought she was selling him butter. It was margarine, and should have been so labelled, the failure to label it being the offence mentioned in the second summons. In view of the fact that the defendant only carried on a small business, he was fined in the mitigated penalty of 40s. on the first summons and of 10s. on the second.

MORE MARGARINE PROSECUTIONS.

At the Leeds City Police-court, on December 29th, Charles Wilks, grocer, 27, Waterloo-road, Hunslet, was summoned under two sections of the Margarine Act, at the instance of the Sanitary Department of the Leeds Corporation. The Town Clerk (Mr. J. Harrison) prosecuted, and Mr. S. Peckover represented the defendant. The first charge was one of selling margarine without a wrapper being placed upon it indicating the nature of the contents. The explanation given by Mr. Peckover was that the defendant had procured proper labels, and that in the case under notice an unprinted label had been inadvertently used. The second charge was one of exposing margarine for sale without having it properly labelled. When Inspector Walker went into the shop after the commission of the last offence, he found a quantity of margarine in a box which had not a label upon it. The label was lying upside down near at hand. Defendant pleaded guilty on both charges. Mr. Peckover addressed the Court, and the Town Clerk pointed out that in 1888 the defendant was fined for an offence under the Act. A fine of 40s. and costs was imposed in each case.—Maria Lawson, 4, Church-street, Hunslet, was summoned for selling margarine which was not enclosed in a printed wrapper. Defendant, who admitted the offence, said the papers had been ordered but had not arrived. The Town Clerk pointed out that defendant and her husband had carried on business for fifty years without previous infringements. Under the circumstances, the Bench inflicted a penalty of 10s. and costs.—Samuel Heathcote, of Waterloo-road, Hunslet, pleaded guilty to a similar offence, and was fined £4 and costs.

Robert Stanley, of Braemar-road, Tottenham, was summoned at Edmonton, on December 29th, by Mr. Tomlin, for selling as butter a substance in which was 20 per cent. of foreign fat. The justices imposed a fine of 10s. and costs. The same defendant, for having exposed for sale margarine, without labelling it as required by the Margarine Act, was fined 10s. and costs.

A CLOSE SHAVE.

"WOOD" OR "GOOD" VINEGAR.

At the Brentford Petty Sessions, on December 16th, before Mr. Montagu Sharpe (in the chair), and other magistrates, John Putnam, greengrocer, of 62, Ealing-road South, Ealing, was summoned for having sold to Mr. Walter Tyler, the Inspector under the Food and Drugs Acts for the Western Division of Middlesex, a quantity of vinegar containing 70 per cent. of dilute acetic acid. Mr. Bartley Dennis, barrister, defended. Edward Watkins, Mr. Tyler's assistant, proved the purchase, on November 15th, at the shop of the defendant, of a pint of vinegar, for which he paid twopence. Defendant's wife supplied him. She told him it was not malt vinegar, but Sarson's. She also said that the vinegar was very good. She served him from a cask. He had previously noticed in the shop window a printed slip, "Excellent strong vinegar 2d. per pint," and a similar slip was displayed on the cask. In cross-examination, the witness said he was certain Mrs. Putnam did not, after looking at the cask, say the article with which he was supplied was "wood" vinegar. Mr. Tyler, the Inspector, in the course of his evidence, also said that the defendant's wife informed him that the vinegar with which his assistant had been supplied was not "malt" vinegar. On his replying that he supposed that it was vinegar, she said "Yes; it's Sarson's." The certificate of the County Analyst showed that the sample forwarded to him contained 70 per cent. of dilute acetic acid not produced by fermentation, and 30 per cent. genuine fermentation vinegar.—In answer to a question, the Inspector said he had purchased vinegar at as low a price as three-halfpence a pint, and vinegar bought by him at that price had been certified to be unadulterated. He knew of no pure vinegar which was cheaper than malt vinegar. Defendant's wife never made use of the phrase "wood vinegar" in his hearing. The phrase "wood vinegar" would convey to his mind the impression that the article was something different from ordinary vinegar, but he knew nothing of such a vinegar.—Mr. Edward J. Bevan, County Analyst for Middlesex, said "wood" vinegar was a perfectly harmless article of food, and if a cask of it were labelled "wood vinegar" it would be properly described. The difference between malt vinegar and wood vinegar was that the former was more aromatic than the latter. Wood vinegar was a compound of acetic acid and water coloured with something; it was manufactured from the distillation of wood, and was not at all deleterious. For the defence it was stated that Mrs. Putnam understood the Inspector's assistant to ask for a pint of "malt" vinegar. She told him they did not sell malt vinegar at twopence a pint, but that they sold Sarson's "wood" vinegar at that price. A customer who was in the shop at the time remarked that this particular vinegar was very good. In answer to Mr. Tyler, the witness admitted that the label "wood vinegar" did not appear on the front of the cask. Mr. Otto Hehner, Analyst, vice-president of the Association of Analysts, stated that after a decision given at the Birmingham Quarter Sessions he had been consulted by Messrs. Sarson, and had advised them to label this particular description of article "wood vinegar," in order to comply with the requirements of the Food and Drugs Act. In reply to Mr. Tyler, the witness said he agreed with the County Analyst as to the nature of "wood" vinegar. Mr. Bartley Dennis submitted that there was no case against his client; that the defendant's wife had informed the Inspector's assistant that the article sold to him was "wood" vinegar; and that the Inspector's assistant was mistaken in supposing that she said it was "good" vinegar. The Magistrates were of opinion that the Inspector's assistant had mistaken the word "wood" for "good," and dismissed the summons.

CO-OPERATION AND ADULTERATION.

Herbert Marlett, manager of the Supply Stores, Totland Bay, was summoned for an offence under the Food and Drugs Adulteration Act. Police-superintendent Coleman proved buying three bottles of sal volatile at the Stores, paying 1s. 6d. for them. Mr. Otto Hehner who analysed one of them, reported that the sample contained but 70·6 per cent. of the amount of ammonia required by the British Pharmacopœia. The defence was that the drug was a sealed packet, and it was impossible to know its contents. A correspondence with the firm supplying the article was put in, and suggested that the sal volatile had been in stock some time, the summer heat, no doubt, caused evaporation. The Magistrate's Clerk (Mr. J. W. Pardell) said notice had been given that the defendant had a written guarantee from the vendors. Defendant said the firm had written withdrawing the guarantee as it was so long since the drug was supplied. The Chairman said, that being so the defendant had no legal defence. He would be fined 1s., and 19s. 6d. costs.

At Brechin Police-court, on December 20th, Alexander Guthrie Mowatt, publican, Church-street, was charged with having sold to Sergeant James Collie, whisky which was adulterated by excess of water. The prosecutor, Mr. Smart, stated that the certificate which he had received from the Public Analyst showed that the spirit was reduced by an admixture of water to the extent of 34 degrees underproof. He was not, however, to ask for a heavy penalty being imposed, as it was the first case of the kind brought up here; but as there had been a good deal of expenses in connection with it, he thought there should at least be a penalty sufficient to cover these. While the Magistrates were considering their decision, one of them asked the prosecutor the extraordinary question if notice had not been given the parties before the samples were taken, and whether such warnings were not given before taking milk samples. The Provost, in disposing of the case, said that, as it was the first of the kind which had come before them, the penalty would be a fine of £1 to cover the expenses. The fine was paid.

MORE VINEGAR PROSECUTIONS.

At Nuneaton Petty Sessions, on December 28, Richard Samuel Green, grocer, Nuneaton, was summoned by Inspector Poultney (Nuneaton), under the Food and Drugs Act, for selling an article purporting to be vinegar which was adulterated with acetic acid and water coloured brown. Defendant pleaded guilty. Mr. Bland prosecuted, and stated that defendant was a respectable tradesman, and had behaved very well in giving all information in his power. Defendant said it was "wood vinegar" from a Birmingham firm, and if it was not right to sell he certainly would not do so. Fined £1 9s. 6d., including costs.

At Birkenhead police-court, on December 22nd, Mrs. Croft, provision dealer, 55, Westbourne-road, was summoned for selling as malt vinegar an article which was not of the nature, substance, and quality demanded by the purchaser. The Deputy Town-Clerk (Mr. Bromfield) conducted the prosecution. Inspector Dawson produced the Analyst's certificate, which showed that the liquid supplied was not malt vinegar, but a weak mixture of acetic acid and water, and even if it had been malt vinegar it was adulterated with 25 per cent. of water. When the Inspector spoke to defendant she replied that he would not get good vinegar at 2d. a quart. He, however, obtained pure malt vinegar at three or four shops at the price mentioned. Defendant's granddaughter was called for the defence, and stated that the vinegar was purchased from the North-Western Hop and Beer Company, Maghull-street, Liverpool, and was sold to the Inspector exactly as it was received from the manufacturers. The Magistrate imposed a fine of 10s. and 17s. costs. Mr. Atkin (the Magistrate) said it was a shame that vinegar manufacturers should subject retail dealers to distressing prosecutions under such circumstances. He informed defendant that she could recover the penalty from the manufacturers.

ALLEGED ADULTERATED VINEGAR.
IMPORTANT CASE AT HEBBURN.

At South Shields Petty Sessions, on December 26th, Daniel Sharpe, grocer, Hebburn, was charged on remand with selling adulterated vinegar. At the previous hearing of the case, the certificate of the County Analyst stated that the vinegar only contained 60 per cent. of malt vinegar, and the other 40 per cent. was derived from other sources. Mr. Arthur Neil, of Sheffield, who appeared for the defendant and for the makers, then asked, that the sample be submitted to the Analyst at Somerset House, and the case was adjourned for this purpose. On Tuesday, Mr. Hiff, of Sunderland, appeared for the prosecution; Mr. A. Neil, of Sheffield, for the defendant, and the makers of the vinegar; and Mr. D. E. Stanford, of Newcastle, appeared for Messrs. Johnson, Dodds and Co., merchants, of Newcastle. Mr. J. M. Moore read the certificate from Somerset House, which stated that it was pure commercial malt vinegar. Mr. Hill said he could not accept the certificate of Somerset House as being conclusive as to the facts in dispute in the case, and he asked for another adjournment so as to bring someone from Somerset House in support of the certificate. Mr. Neil strongly opposed the application for an adjournment. Mr. W. C. M. Dale said the Bench had come there to hear Mr. Stock, the County Analyst. If Mr. Hill had no further evidence, they should certainly dismiss the case.

Mr. Stock went into the witness-box, and said he was the Public Analyst. He received the sample of vinegar, which he analysed, and found that it only contained 60 per cent. of malt vinegar. In his opinion the certificate of the Somerset House authorities was not correct. The other 40 per cent. of the sample was vinegar, but not malt vinegar. He seriously differed from the Somerset House certificate. Henry Doncaster was similarly charged, and Mr. Neil said in justice to the defendants it ought to be stated that the vinegar which was sold by the defendants was sold to them with a written certificate stating that it was pure malt vinegar. The vinegar had been sold for the past 150 years, and Mr. Stock was the first Public Analyst to discover that it was not the correct article. It had stood the test at Somerset House, and he contended that the case should fail. Mr. Francis Sutton, County Analyst for Norfolk, said that in his opinion the sample was that of pure malt vinegar. It was not possible to make vinegar of a purer nature. The Bench after retiring, determined to dismiss both cases, with costs, which they fixed at 14 guineas.

MR. RICKETTS AGAIN SUCCESSFUL.

At Greenwich, on December 27th, Richard D. Hodges, of 63, Lower-road, Rotherhithe, was summoned by Joseph Edwards, Sanitary Inspector for Rotherhithe, on a charge of selling milk not of the nature, quality, or substance demanded. Mr. Ricketts for the defendant objected that particulars of the offence were not given as required by Section 10 of the Adulteration of Food and Drugs Act. Mr. Rose held that the objection was fatal, and dismissed the summons, but made no order as to costs.

A PECULIAR VINEGAR CASE.

At the Enniskillen Petty Sessions on Monday, the case against Mr. George Elliott, Church-street, Enniskillen, came on for hearing. Some time ago Mr. Elliott was summoned along with a number of Enniskillen merchants and shopkeepers for selling adulterated vinegar, and his was the only defended case. Sir Charles Cameron certified that the sample of vinegar in question was merely acetic acid.

Mr. C. F. Falls, defendant's solicitor, contended that it was pure distilled vinegar, and asked that a sample be sent to the Somerset House authorities for higher analysis. The Bench agreed to this course, and adjourned the case for the production of the certificate of the analysis of the Somerset House authorities.

On Monday last the certificate was read before the Court, which subsequently stated that the sample submitted was pure distilled vinegar. Under these circumstances Mr. Irvine, solicitor, withdrew the prosecution.

Mr. Falls insisted on a dismiss, which was granted with 20s. costs.

The following is the Somerset House certificate:—

The sample of vinegar marked "Geo. Elliott, Church Street, 19.7.93," was received here on the 25th ultimo, securely sealed.

We hereby certify that we have analysed the same, and declare that it contains 11.4 per cent. of acetic acid, and we are of opinion that it is distilled vinegar, slightly coloured.

As witness our hands this twentieth day of November, 1893.

J. BELL, D.Sc., F.R.S.

R. BANNISTER, F.I.C., F.C.S.

JAS. CAMERON, F.I.C.

THE EXCESS WATER IN WHISKY GAME.

At the Neston Petty Sessions on Friday, December 29th, Thomas Morris, landlord of the Shrewsbury Arms, Little Neston, was summoned at the instance of Mr. W. J. Hallard, the Inspector under the Food and Drugs Act, for selling whisky 32 degrees under proof. The Inspector deposed to visiting the defendant's house on the 17th ult., accompanied by his assistant, John Bracegirdle, and after purchasing a glass of whisky, instructed his assistant to purchase a pint of the same. The defendant's brother served him with it. The Inspector then told him that it had been purchased at his direction, and that he intended to take it to the Public Analyst for analysis. His offer to divide it into three portions was accepted, one part being left for the defendant. The Analyst's certificate stated that the whisky was 32 degrees under proof. Defendant said his brother did the mixing of all the spirits, and the hydrometer had got broken, so he had to do it by measure, and supposed he must have made a mistake. The Chairman said there may have been a mistake made, but he would have to pay a fine of £1, and 14s. 6d. costs.

William Garnham, grocer, Neston, was then summoned for exposing margarine for sale on the 24th ult. without labelling the same. The Inspector spoke to visiting defendant's shop and seeing on a dish what appeared to be butter. When asked for a pound of this, the defendant's wife admitted it was margarine. The Inspector called her attention to it not being labelled. She then said the child must have taken it off. She made no attempt to find it. Fined 10s. and 8s. 6d. costs.

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THE BRITISH MEDICAL JOURNAL ON BEER.

To the EDITOR of FOOD AND SANITATION.

SIR,—The *British Medical Journal*, of December 23rd, contains, under the title "What is Beer," the following delicious paragraph for the instruction of medical men, anxious for authoritative information on the composition of beer:—

"The statement that 'there is no legal definition of beer,' referred to by a correspondent as appearing in the report of the Local Government Board, is not a statement made by that department, but a quotation from the report of a Public Analyst, who is evidently very imperfectly acquainted with the subject. The Act 43 and 44 Vict., c. 20, defines beer as including 'ale, porter, spruce beer, and black beer, and any other description of beer.' The permission to use sugar and other malt adjuncts as a source of alcohol in brewing is carefully controlled by the Excise Officers, according to definitions and provisions in the Act. By a subsequent Act (48 and 49 Vict., c. 51) the definition of beer was extended to 'any liquor made or sold as a description of, or substitute for beer, and in which on analysis more than 2 per cent. of proof spirit shall be found,' and by a general order that limit was afterwards raised to 3 per cent. The strict supervision under which brewers carry on the manufacture of the varieties of beer commonly used as beverage, constitutes the best guarantee against adulteration during that stage. The chemical nature of the several constituents of beer is sufficiently well known to admit of its quality as an article of diet being satisfactorily ascertained, and any adulteration likely to be practised by retailers detected. Consequently the statement that 'the Public Analyst is at present absolutely powerless to deal with beer,' amounts to nothing more than a confession of ignorance discreditable to persons holding that position."

It is difficult to avoid coming to the conclusion that the writer of this paragraph in his festive humour wanted to have a little game with the readers of the *British Medical Journal*, but as his humour might after all be mistaken for serious argument, I ask you, sir, to be good enough to grant me a little space to discuss the matter. I accept the writer's quotations from the two Acts of Parliament, but must add that 43 and 44 Vict., c. 20, sect. 40, also states: "For the purposes of this part of the Act (retail sale) each of the following terms shall have the meaning assigned to it in this section." Cider includes perry, and "beer" includes cider, so that beer is also cider and perry. I make the writer of the paragraph in the *British Medical Journal* a present of this quotation from the Act, as it widens the definition of beer. I further, freely, and without the shame which I suppose I ought to feel, confess that I am one of the ignorant persons who hold the "discreditable" opinion that "the Public Analyst is at present absolutely powerless to deal with beer." In fact, I am not at all sure whether this identical remark was not made by me in one of my reports under the Sale of Food and Drugs Act, from which it was quoted by the Local Government Board. I feel no shame, because I know that the majority of those men whose opinion, professionally, I value most, namely, fellow Public Analysts under the Sale of Food and Drugs Act, share my "discreditable ignorance" in this matter.

But, if the writer whose effusion I have quoted at length is satisfied with this so-called definition of beer given by the Inland Revenue Acts, and accepts it as a real definition, his order of mind is evidently so different from mine that I despair of arguing with him. To me the definition, so-called, of the Revenue Act is no definition at all. The Act, for the purpose of levying revenue, states, in effect, that everything shall be considered beer which is made or sold under the name of beer, provided always that ginger beer shall not be included or other beverage containing less than 3 per cent. of proof spirit. To put it more shortly still, the Act says "Beer is beer." The Public Analyst has therefore no right to say, that beer is not beer, and he is therefore "absolutely powerless to deal with beer," for by the Inland Revenue Act the brewer may make his beer of sugar or other malt substitutes; he need not use any malt at all; he need use, as he well knows, if he so wishes, no hops at all; he may use as much water as he likes, provided he produces not less than 3 per cent. of proof spirit; and if he should happen to have produced so thin a beverage that it could not keep for more than a few days, he is at liberty to add preservatives according to his fancy. I don't suggest, far be it from me, that any brewer would do such a thing, but he might under the "definition" of the Act.

The permission to use sugar and other malt-adjuncts as a source of alcohol is carefully controlled by the Excise Officers, but with the sole object to get for the revenue every penny which can be lawfully levied from the brewer, and in no way for the protection of the public. The "strict supervision" is absolutely no guarantee against anything, except that the Revenue gets its full pound of flesh. There is no adulteration of beer, legally, because "beer is beer."

When the writer of the *British Medical Journal* article says that "the chemical nature of the several constituents of beer is sufficiently well known to admit of its quality as an article of diet being satisfactorily detected," I am sorry to feel that he talks nonsense. The "several" constituents of beer being absolutely undefined by the Act, they cannot be well known, for it is left to the ingenuity of the brewer and his chemical advisers to vary the constituents *ad libitum*, and they do so vary the same. If the writer speaks of the "several constituents of beer" in the chemical sense, meaning thereby alcohol, extractives, acidity, etc., then again I say, this time as an Analyst who has pretty closely studied the subject, that the constituents of any beverage cannot be stated to be "sufficiently well known" when no Analyst living with all knowledge, skill, and experience accumulated up to the present time, can say from his

analysis whether such beverage when drunk will rouse pleasurable feelings without ill after-effects, or whether it will make the consumer a furious madman, the owner of headache and diarrhoea.

I again say, that I make no insinuations against brewers. They are conducting their business within the wide limits allowed them by the Revenue Acts and, therefore, within their strict legal rights. They are advised by a mostly very intelligent body of men, the brewers' chemists, whose aim is to produce a beverage which will keep (or is made to keep), look bright and clear, and taste well, and to make it in most cases as cheaply as possible. But from the public point of view the position is hardly satisfactory. Prejudices die hard, and it may be a prejudice to believe that beer made from malt and hops water and yeast only, is healthful, while beer made from malt-substitutes and, possibly, hop substitutes, is not (always) healthful. But the average purchaser has this prejudice, and what is more, when he asks for a glass of beer he is, in nine cases out of ten, under the impression that he gets malt and hop beer; in which impression also, in nine cases out of ten, he is mistaken. The brewers' chemists have educated the brewers, but have failed to educate the public up to their exalted standard. And when any enlightened member of the public, even if he be a bishop, ventures to raise his voice against this unsatisfactory state of things, down comes the brewer, by using precisely the logic which is beautifully displayed in the paragraph of the *British Medical Journal*, and which has induced me to write this reply. The brewer says there is no adulteration of beer whatever, as proved by the absence of the mention of beer among adulterated articles in the reports of the Public Analysts, and by the presence of the Inland Revenue officers in the breweries. The Analyst says, there is no adulteration of beer, because unfortunately by law beer is beer, whatever it be made of.

Can our sapient legislature, engrossed though they be with matters which do not make a rushlight difference to anybody, find time to think of beer?

I remain, Sir,

Yours very faithfully,

OTTO HEHNER.

11, Billiter-square,
London, December 29th, 1893.

SHOULD SAMPLES BE DIVIDED IF TAKEN UNDER THE MARGARINE ACT?

SIR,—Please inform me whether you consider it compulsory or discretionary to divide a sample of margarine after the seller admits it is margarine. I usually buy one sample for the analyst's confirmation, not dividing it.—W. J. H.

Undoubtedly it is compulsory to divide samples taken under the Margarine Act in the same manner as if taken under the Food and Drugs Act, section 10, says: "Any officer authorised to take samples under the sale of Food and Drugs Act, 1875, may, without going through the form of purchase provided by that Act, but otherwise acting in all respects in accordance with the provisions of the said Act as to dealing with samples take for the purposes of analysis samples of any butter or substances purporting to be butter, which are exposed for sale, and are not marked margarine, as provided by this Act, and any such substance not being so marked shall be presumed to be exposed for sale as butter." It will be thus seen that it is expressly stipulated that the person taking samples must act in all respects in accordance with the provisions of the Food and Drugs Act, 1875, "in dealing with samples."

The spirit of the Margarine Act supposes such division of samples in fairness to the vendor in case he denies the substance is margarine. Section 12 of the Margarine Act is clearly in favour of the division of samples, saying that "All proceedings under this Act shall, save as expressly varied by this Act, be the same as prescribed by Sections 12 to 28 of the sale of Food and Drugs' Act, 1875."

FIFE COUNTY COUNCIL AND ADULTERATION.

A statutory meeting of this Council was held at Cupar. The Hon. George Waldegrave-Leslie moved—"That the Inspectors under the Food and Drugs Act, being the County Medical Officer and the officers of the Fife County Constabulary Force, be requested to direct their attention, as far as possible, to the whole provisions of the above Act, by obtaining samples of milk, ales, porter, pepper, sugar, mustard and whisky, ground coffee, &c., &c., and send them to the County Analyst for examination and report." He stated that a number of these were adulterated, and was of opinion that if there were less bad whisky people ought to come out of the Asylum oftener than they do. Mr. Buchan, in seconding, said the instructions would come with far more force from the Council than from a Committee. Mr. Fyshe asked if those who had been prosecuted for adulterating whisky had been fined. The Chairman replied that fines were imposed in some cases and not others. The motion was unanimously adopted.

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OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

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or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labor.

Why support the product of a country which brags of McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDENS' FACTORIES, LIVERPOOL.

Food and Sanitation.

SATURDAY, JANUARY 13, 1894.

DISEASE AND DISINFECTANTS.—VI.

Our last article dealt with Dr. Klein's report on Izal, and the unwarranted assertions made on the strength of that report that Izal was non-poisonous. Our experience of reports on disinfectants is, we must confess, not a satisfactory one, and in this respect we are supported by recent investigations into this subject by Mr. H. Helbing and Dr. F. W. Passmore. Some months ago we showed how murder was made easy by the use of one swindling disinfectant that caused five deaths. Our enquiries since that period disclose that fact that places innumerable are using as 10 or 15 per cent. carbolic disinfectants, substances containing only one or two per cent. Mr. Helbing and Dr. Passmore support our often expressed complaint that "It is remarkable that no official control whatever exists which safeguards the public in this direction, and ensures that it obtains a disinfectant of full value. This is more to be regretted, as on the other hand unnecessary exertions, bordering on the ridiculous, are often made by the Inspectors appointed under the Food and Drugs Act in maintaining the quality of the articles committed to their supervision. We leave it to the reader to decide whether it would not be much more to the benefit and advantage of the public if the Food and Drug Act could be employed or extended to allow action to be taken against the misleading assertions made in advertisements of disinfectants, and to check the sales of inferior preparations, than that the energies of the Inspector be devoted to procuring a conviction against a man who sells as a beverage soda water which is not up to the medical and nauseous dosage of the British Pharmacopœia.

"If those interested in framing the laws of the land would make efforts to secure legislation in this direction, they would confer an inestimable boon upon the public and society at large.

"Under present circumstances the market is left open alike to the conscientious manufacturer of scientifically prepared articles, to the unscrupulous manufacturer whose sole aim is to secure the largest immediate pecuniary profits, or to those who are themselves misguided through ignorance of the true value of their productions.

"The public is also often misled by scientific statements of a very doubtful character, which on close examination prove to be of little or no practical value."

It seems incredible that considering the importance of this subject to public health nearly every local authority in the Kingdom is content to buy its disinfectants on trust and to never subject them to analysis, and that in the few cases where they do analyse a disinfectant, and find it a swindle, they hush up the case, as in Holborn, instead of prosecuting. Altogether the system of purchasing disinfectants could not well be worse or more dangerously deceptive. Where, therefore, local authorities are too niggardly to pay for analysis of their supplies, it is very necessary that officials should know what disinfectants there are that can be relied upon as genuine. In their investigations Messrs. Helbing and Passmore were guided by the following considerations of the properties a good and effective disinfectant should possess: 1, Easy distribution; 2, Activity against bacteria; 3, Activity against spores; 4, Deodorising properties; 5,

Relative strength and cheapness; 6, Innocuousness to human life, and they have classified the disinfectants as follows:—

1. *Essential Oils* in the pure state have a decided disinfectant value, but aqueous solutions which do not contain more than a fraction of one per cent. of these oils, are comparatively valueless for the prevention of infectious diseases.
2. *Tar Oils*, which are of most complex nature, contain a number of valuable disinfectant compounds in varying properties, and by the selection of Tar Oils containing large quantities of the latter and subsequent suitable treatment, the most efficient disinfectants can be prepared.
3. *Other Organic Compounds* used as disinfectants are mostly definite chemical compounds, such as naphthalene, which have, however, many drawbacks if used alone.
4. *Minerals*. A number of metallic salts possess very active properties against germ life, but like corrosive sublimate and zinc chloride their poisonous qualities towards human life are on a par with their bactericidal powers, whilst they are also very destructive to property when incautiously employed, especially the fumes from burning sulphur or sulphurous acid gas, or chlorine from chloride of lime and other sources.
5. *Steam*, although unsuitable for many purposes and not capable of general application, is an efficient disinfectant. On the Continent, public steam disinfectors are erected for the disinfection of clothing and bedding free of charge.

The experience of these authors is, "From the appearance of some disinfectants we should have considered them good preparations, and unless we had resorted to analysis, should just as easily have been deceived as any of the public. Even a person with a good scientific education might be easily misled without knowing the detailed facts of the case. To form a true opinion we have had to determine the composition of the disinfectants, and acquaint ourselves with the circumstances under which their manufacture was carried out.

DISINFECTANT POWDERS,

"Are, as a rule, not such powerful preparations as the fluids. They are extremely serviceable for strewing the ground, especially where decomposing liquid organic matter is present. The chief requirement in a disinfectant powder is that the active ingredients should exist in a soluble form. In some cases in which soluble disinfectants are employed, analysis shows, however, that they are rendered useless by their action being neutralized by the bulk of the powder.

LIQUID DISINFECTANTS.

"Solutions of various mineral salts have a high disinfectant value. All, however, possess important drawbacks to their general use. In most cases they are very active poisons to the human system, in others they too rapidly lose their character when exposed, to be efficient for general disinfection. Those preparations which evolve disinfectant gases when exposed to the air, have many merits in cases where fumigation can be resorted to, but of course it must be borne in mind that the atmosphere charged with these gases, particularly sulphurous acid and chlorine, cannot be breathed by human beings.

"*Coal Tar Fluids*.—This term is applied to preparations of the coal tar oils, which contain the various valuable disinfectant components of coal tar, including creosylic acid, mixed with other ingredients that render them soluble or miscible in water.

"The preparations of coal tar oils presented to the public fall into three distinct categories, according to their behaviour when mixed with water.

1. Such as give a clear solution.
2. Such as give an emulsion.
3. Such as exist as emulsions.

"The difference in the first two classes is solely occasioned by the ingredients added to them. They may be equally rich in disinfectant constituents. That point can only be determined by analysis or bacteriological research. What has already been said in regard to the respective values of solutions and emulsions is, however, specially applicable here. The emulsion presents great advantages in its clinging and persistent action on accumulations of infected matter, without losing the qualities of a solution.

"Those preparations which exist as emulsions must naturally contain more water than those offered in the concentrated form.

"The history of coal tar disinfectants is by no means an ancient one. Disinfection itself is a modern advance. The manufacture of an all-round satisfactory preparation is not at all an easy task, owing to the complex nature of the tar oils and their varying composition. Experience and patient investigation can alone secure the production of a uniform and constant preparation.

"Typical in this class of disinfection is

JEYES' FLUID,

which, under the name of Creolin, made such a sensation when first bacteriologically investigated in the laboratory of Professor R. Koch. The advantages it possesses as a reliable and safe disinfectant are recognised in Government institutions, in hospitals and clinics, and in the lengthy reports which are scattered throughout the medical literature of the whole world.

Besides this, the preparation has, in the hands of Medical Officers of Health, Sanitary Inspectors, and vestry officials, been submitted to the most severe practical trials as a disinfectant and deodoriser for general use.

What we have to say about it seems little compared with what is generally known, but it is, perhaps, of no small importance.

We have for more than a year analysed each bulk of Jeyes' Fluid that has been sold for use in this country, and when compared with the analyses we have made during the same period of other similar preparations and imitations, Jeyes' Fluid has proved to be of much more concentrated and uniform composition than any other coal-tar disinfectant we have had in hand.

"We do not say that there are not other disinfectants equally good and effective, but, whilst we cannot speak of any of those which have come before us as equal to Jeyes', we have convinced ourselves as to the advantages of Jeyes' Fluid, and we do not hesitate to recommend it to all who wish to be sure that disinfection is reliably and successfully carried out.

Coal-tar disinfectants are made from coal-tar oils that vary in composition not only according to the source from which each is prepared, but in each batch prepared from the same source.

It is this unreliability of the crude products that makes it so difficult to procure a coal-tar fluid that always contains the same proportions of disinfectants, just as it is difficult to obtain wines or spirits always with the same bouquet, composition and strength.

Superficial analysis is of no avail in this direction, and a mere glance as to the qualities of tar acids (the most active ingredients) and the hydrocarbons in a disinfectant fluid is of no good whatever."

Recent experiments were made by Mr. Carrie M. Stewart, "for the purpose of ascertaining what agent, alone or or combined, would best answer the requirements of a dental disinfectant; one which can be used in diseased conditions of the oral cavity, alveolar abscess, putrid pulp, &c., with especial reference to quickness of action, with the least possible irritation and the greatest acceptability to the patient. The germs used in the experiments were those often found in the mouth, the *staphylococcus pyogenes aureus* and *albus*. The bacteria belonging to the cocci groups were selected because of the greater resistance of this form of germ to the destructive influences than those belonging to the bacilli or spirilli types. The germs were grown in test tubes containing 5 c.c. of beef bouillon. To this 1 c.c. of the disinfectant was added. With Permanganate of Potassium 1 per cent. solution to 5 per cent. bouillon culture of *aureus*, numerous developments occurred after three days. With Listerine 1 to 5 of a bouillon culture of the *albus* all plates were well developed after four days. With Creolin 1 to 5 c.c. of a bouillon culture of the *albus* prevented all development.

Sir Charles A. Cameron, Medical Officer of Health and Public Analyst, Dublin, President of the Society of Public Analysts, corroborates the conclusions of Messrs. Helbing and Passmore, saying Jeyes Fluid is "a most powerful sanitary agent. I can strongly recommend it as a really efficacious disinfectant and air purifier." The 53 medals and certificates therefore obtained by this firm appear well merited, and local authorities can rely upon Jeyes disinfectants really being what they are professed to be—thoroughly reliable preparations.

(To be continued).

THE MAYBRICK CASE.

MORE GLYCERINE FOUND TO CONTAIN ARSENIC.

The report of Mr. T. Fairley, Public Analyst for Leeds, on samples analysed by him during the December quarter 1893 says, that out of eight samples of glycerine analysed, five were found to contain appreciable quantities of the irritant poison, arsenic. Mr. Fairley's results support the facts to which we first directed public attention, viz., that commercial glycerine on sale at the time of James Maybrick's death contained more arsenic than was found in the Maybrick post-mortem. Dr. Stevenson's evidence that *one-tenth* of a grain of arsenic would account for Maybrick's death, it may be remembered, was conclusively shown by the late Dr. Tidy and Mr. Rawdon MacNamara, to be utterly devoid of any proof to support it; but it was that evidence that caused Mrs. Maybrick to be convicted. In the light of the recent discoveries that ordinary commercial glycerine, although this was utterly unsuspected by anyone concerned with the case, contained actually more arsenic than was shown to be present in the post-mortem, and of the fact that the patient was given ignorantly Valentine's meat juice—an almost worthless article in a nutrient sense—as the highest form of nourishment, and was declared, first of all by his medical attendant, to have died of exhaustion, which, judging by the trash he got, was, no doubt, the exact truth, there is every circumstance pointing to the fact that James Maybrick did not die of arsenical poisoning, and that his widow is suffering, innocently, a terrible punishment. The whole case is so terrible, and so unsatisfactory in its medical, chemical, and legal aspects, that it ought to be re-investigated.

THE EXCESS WATER IN BUTTER TRADE.**IMPORTANT PROSECUTION AT MANCHESTER.**

The contest between the Manchester Authorities anxious to protect the public against three-halfpenny worth of water being sold to them at butter price in each pound of Irish butter, and the Irish butter merchants who would rather do that than sell butter containing a normal quantity of water, began at Manchester, on January 3rd, before Mr. Headlam, the Stipendiary, and other Magistrates, but as usual the retailer is the victim. The cases were of exceptional interest to the provision trade and of general interest to the public, the question to be decided being what amount of water in butter constitutes an adulteration of that article. The defendant in the first case was James William Shaw, a retail grocer, who has ten shops in Manchester, and for whom Mr. Leak appeared. Mr. Edgar (Boote and Edgar) appeared for James Kay and Co., provision merchants, Corporation-street, who had sold the butter under a warranty to Mr. Shaw, and who was summoned for giving a false warranty. Mr. Sutton, who appeared for the Corporation, said that the summons against Mr. Shaw charged him with having, on the 27th day of September, sold to the prejudice of the purchaser a pound of butter which was not of the nature, substance, and quality of the article demanded, such butter containing an excess of water to the extent of 11½ per cent. One of Mr. Shaw's shops was at 63, Rochdale-road, and on the 27th September an Inspector for the Corporation went to that shop. On the counter was a tub of butter with this ticket on it "Shaw's pure butter 1s. 1d." It was Irish butter. The Inspector bought a pound of it, and then told the shopman that he had bought it for the purpose of analysis. It was analysed, and found to contain 26½ per cent. of water, or an excess of 11½ per cent. Butter, if the best available scientific process was employed, could be manufactured without water in it at all, but, of course, the Corporation did not expect that that should be the method adopted throughout the country by all persons. By the old process of washing the buttermilk out it was obvious that some of the water must remain, but the question was whether such an amount as 26½ per cent. was properly and unavoidably left in. The contention of the other side would be that the water had been unavoidably left in in the process of manufacture, and if that were so the defendant was protected by the Act. His argument was, that when the section spoke of what was unavoidably mixed in the process of collection or preparation, it meant to say that the substance as sold was unavoidably mixed with some foreign substance which got there in the process of collection or preparation. It did not mean to say that because a foreign substance was used in the manufacture that therefore the maker was at liberty to leave in the article as much of the foreign substance as he chose. He was only to leave in as much as he could not get out. In this case the amount of water left in was altogether abnormal. He would call evidence to show that anything over 18 per cent. of water would be such an excessive quantity that anyone who was dealing with the butter must know the water had been intentionally left in. Mr. Shaw relied upon his warranty. He said, however, with such a large quantity of water in the butter, as there was in this case, that Shaw must have been aware of the excess when he cut into it, and therefore if the warranty were given that could not excuse the defendant.

Mr. Edgar said on behalf of Messrs. Kay he accepted the responsibility of the warranty in every way, and would undertake the contest as to that warranty upon himself.

Mr. Headlam: Yes, but I do not know that I can stop the case, as it affects Shaw.

Inspector Holland formally proved the purchase of the butter from the defendant's shop.

Mr. Charles Estcourt, City Analyst, said he had analysed the butter, and found it to contain 26½ per cent. of water, or an excess of 11½ per cent. The outside limit of water in butter was 15 per cent. With 26 per cent. of water in butter it would be difficult to keep the water in. The excess would make itself evident at once.

Cross-examined by Mr. Leak: He said the standard of 15 per cent. was adopted by the Society of Public Analysts many years ago. The majority of butter samples he had analysed contained 12 per cent. of water. He had analysed samples of Irish butters during the present year, and found them to contain 15 and 17 per cent. of water. French, German, and English butters averaged 12 per cent.

Mr. Edgar: We shall have a good deal to say about that statement when our time comes.

Mr. Bradbury (who represented another defendant): We say it is all rubbish.

Mr. Edgar: Manchester is learning a great deal since the 1st of January. (Laughter.)

Mr. Alfred Allen, Public Analyst for the West Riding of Yorkshire and Sheffield, said he had examined thousands of samples of butter. Fourteen years ago he was engaged in a number of prosecutions similar to this, and convictions were obtained. The excess of water in butter then disappeared, but had reappeared within the last two years. When he said he would allow 16 per cent. of water as the legal amount in Irish butter, he was, if anything, stretching a point. Twenty-six per cent. could not be "unavoidably mixed" in the process of manufacture. If butter contained such a quantity it would make itself apparent.

Mr. Leak said he did not dispute the facts as alleged by the prosecution, but, he said, when the defendant sold the butter he had not the remotest idea that it contained an excess of water. It was against the interest of the grocer to sell butter containing an excess. It was the manufacturer who benefited when there was an excess. The fact that the wholesale merchant had been summoned for giving a false warranty was an admission that Mr. Shaw's defence was a good one.

The defendant was called and said he had been in the grocery business twenty-seven years. He bought the butter on a warranty that it was pure. No one except an Analyst could tell how much water there was in butter. When he purchased the butter that was concerned in this case, he had no notion that it contained so much water. Had he done so he would not have bought it.

Cross-examined: He knew that a deputation from the Manchester and Salford Grocers' Association had waited upon the Corporation with reference to Irish butter, but he did not know exactly what transpired. He knew it had been complained that Irish butters contained more water than was right. When he bought the butter he bore it, and knew it contained water, but he did not know how much.

Mr. Sutton: You wilfully closed your eyes to the extent of water in the butter?

Witness: Well, that is putting it rather awkwardly.

Re-examined: He had no reason to believe that it contained more than 15 per cent.

Mr. Bancroft, manager for Messrs. Kay and Co., said he had had seventeen years' experience of the butter trade. The quantity of water in butter could not be determined by its appearance. Witness said that Danish butter containing 14 per cent. of water would sweat more than Irish butter containing 22 per cent. The explanation of the excess in this case was that it was made in August, when the temperature was 82 degrees in the shade.

Cross-examined: After the prosecution of a retail grocer some months ago the grocers agreed not to purchase butter from merchants unless they got a guarantee of purity. Their object was to put the responsibility on the right shoulders. The butter in this case came from County Clare, and was the lowest and commonest class of Irish butter, and he said it was not adulterated. Irish butter containing 25 per cent. of water would show it less than Danish butter containing 15 per cent. All butter showed water in drops.

John Williams, a Manchester grocer of 30 years' experience, said it was impossible to tell how much water there was in butter. Butter which showed water on the surface frequently contained less water than butter which was apparently dry. After the prosecution of a Manchester grocer, the Retail Grocers' Association took up the position that, seeing it was impossible for them to tell how much water there was in butter, they would not buy butter from the wholesale men without a guarantee as to purity.

Cross-examined: The lower grades of Irish butter did very often contain a considerable quantity of water. When there was an excess of water it was against both the grocers and their customers.

Charles Jump also gave evidence as to the impossibility of detecting an excess of water. There was more salt in Irish butter, and his theory was that it kept the water in.

Cross-examined: He was the grocer who was summoned for selling butter containing an excess of water. He was heavily and unfairly fined. (Laughter.) The butter in respect of which he was fined was as hard as wax.

Henry Robinson and Simeon Leak also gave evidence in support of the defendant's case.

Mr. Estcourt, recalled by Mr. Sutton, said he could distinguish

HORLICK'S
MALTED
MILK
For Infants
and Invalids.
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLE FREE. 39, SNOW HILL, E.C.

those samples which he received which contained an excess of water. His experience did not agree with the statement that more water would run from Danish than from Irish butter. He did not think that the salt made the difference which Mr. Jump had suggested.

Mr. Allen, recalled, said, as a rule, when there was an excess of water it became apparent by scraping or pressure. There were cases in which there might be 20 per cent. of water without the butter merchant being able to discover it by anything short of analysis.

Mr. Leak: On looking at a pound of butter could you tell to two or three per cent. how much water it had in it?

Witness: Oh, no. I could not. (Laughter.) You would not want an Analyst if you could.

This closed the case, and Mr. Headlam decided to hear the others before giving his decision.

At the request of Mr. Bradbury, who appeared for the defendant, the case against Robert M'Comus, a grocer carrying on business in Upper Brook-street, Manchester, who was summoned for selling butter containing an excessive quantity of water, was taken next, Mr. Bradbury representing that he had over twenty witnesses from Ireland, including several experts, and it would be very expensive if they were kept waiting.

It was proved that in September a Corporation Inspector bought a pound of butter at the shop. It was labelled "Fresh and pure, 1s." It was Irish butter.

Mr. Estcourt, City Analyst, said the sample contained $2\frac{1}{2}$ per cent. of water, an excess of $\frac{1}{2}$ per cent. of water. In his opinion there was no difficulty in reducing the quantity to 15 per cent. in all countries.

Cross-examined, he said he had not had any experience of the circumstances under which Irish butter was manufactured. The sample in this case was not of the nature, substance, and quality of genuine Irish butter. A few years ago genuine Irish butter contained 15 or 16 per cent. of water, but this sample contained over 20 per cent. Do you suggest that the Irish butter makers have fraudulently gone back and added this extra water? Undoubtedly. That is a very serious charge against a respectable trade? That is quite possible. You know, don't you, that the Irish butter trade in all its branches is entirely against you in this matter? I do not know. Witness further said that at Somerset House the standard had been fixed.

Mr. Bradbury here read a letter from the Chief Secretary of Ireland to the Manchester Produce Merchants' Association stating that it was not fixed by law what percentage of water in butter constituted adulteration, but that any addition of water to butter already manufactured was an offence against the law. He asked if Somerset House had fixed any definite amount, and said above that amount there was adulteration?

Witness replied that they had fixed it as definitely as they could, and under that definition there was adulteration in this case. It was true that in Denmark and in Derbyshire and Cheshire there were greater facilities for turning out first-class butter than there were in Ireland, but he fixed the same standard for butter which came from all three places. It was a standard which covered all. Twelve per cent. of water was sufficient, and if 15 per cent. was allowed it covered all. Asked with reference to samples taken by the Danish Government showing that 35 per cent. of high-class butters contained more than 15 per cent., he repeated that butter could be made with 12 per cent. Then do you say that this 35 per cent. is adulterated? To strain a point, I should not report it as adulterated. If it was much in excess of 15 he would, he added, report it as adulterated. He did not know whether there was anyone in the trade who was present to support the prosecution in this case.

Re-examined, he said he had been analysing butters for 20 years, and he based his evidence on his experience. There could be no difficulty in reducing the percentage to below 15.

Mr. Alfred Allen, Public Analyst for the West Riding of Yorkshire and for Sheffield, also said that the sample was adulterated to the extent of over 6 per cent. The extreme limit he would allow was 16, whereas the sample contained $2\frac{1}{2}$. In one case Somerset House agreed that where there was 23 per cent. of water it was at least 5 per cent. in excess. If a standard of 25 per cent. was allowed, all butters would soon contain that amount of water.

In the course of cross-examination, he said in one prosecution for the adulteration of Irish butter it was said for the defence that it was very wet on the day the cows were milked. (Laughter.) That was not a joke; it was said seriously. It would be incomprehensible to him to find 15 per cent. of water one day and 18 per cent. the next in butters made under the same conditions. He thought the Danish analyses had been drawn up purposely to meet the Irish competition. He had no experience of Irish butter making.

For the defence, Mr. Bradbury said that the case was of the greatest importance to the Irish butter trade. Practically the defence in this case was taken up by that trade. He had present representatives of the trade from Ireland, including farmers, dairymen, merchants in Limerick and Cork, the wholesale people in Manchester, and shop retailers in every part of Lancashire. They would all tell the court that if the standard of 15 per cent. was maintained it would practically shut out of the market four-fifths of the butter manufactured in Ireland, and the people who consumed that butter would have to pay higher prices for, and take a commodity which they did not want. It was for these reasons that the gentlemen he represented, namely, the Cork Butter Market, had taken up the defence so strongly. They would tell the court that four-fifths of the butter going through their market contained more than 15 per cent. of water. The only evidence before the court that Irish butter was not what it ought to be was that of two professional analysts. No person

from the trade supported them. The question was, whether it was possible that genuine Irish butter might be manufactured and contain 20 or 21 per cent. of water. The working classes wanted an article which was a perfectly well-known commercial commodity, namely, Irish butter, and if they got it there was nothing done to their prejudice. It could not be said that they got what was not of the nature, substance, and quality of the article demanded. It was sold at a cheaper rate than the other butters, and where then was the prejudice to the customer? If the population wanted that article, it was a strong thing for the Manchester Corporation to attempt to shut out that article from the English market. He hoped to satisfy the Bench that genuine Irish butter, fairly and honestly made, could, and did in lots of cases, contain 21 per cent. of water. In consequence of representations made to them, the authorities of the Cork Market had for twelve months been trying their best to get the amount of water in butter reduced, but they found that it could not be produced to contain a minimum of 15 or 16 per cent. Samples had been taken week by week from butter which came from all over Munster. These samples, 150 in number, and fairly chosen, had been sent for analysis by an expert to Dublin, and it was found that 80 per cent. of them contained between 15 and 21 per cent. of water. If that was so, he said, in this instance, a commodity of the nature, substance, and quality demanded had been sold, and he would point out that only 20 per cent. of all those samples would satisfy the standard it was attempted to set up in Manchester. Not only had the analysis been made, but a committee of the Cork Market, who understood butter making, had had butter made in their presence at various places. It was carefully made, and yet it was found to contain from 17 and 18 up to over 20 per cent. of water.

At this stage the hearing was adjourned until Saturday. The first witness called on Saturday was the defendant, M'Comus, who said he purchased the firkin from which the sample was taken from W. D. Perry, the Manchester agent for Connell and Co., of Cork. Part of the sample he sent to Mr. Perry. Although he had been in the trade 17 years he said it was impossible to tell without analysis the percentage of water in butter. There was a great demand for Irish butter, and he had received no complaint as to the quantity of water in it.

W. D. Perry, the Manchester agent for Connell and Co., was next called. He traced the firkin from which the sample was taken to Connell and Co. He bought it at the end of August, and should say it was made in the middle of that month. It would be sent direct to the Cork Market after making as that was the practice of the farmers. They realised as soon as possible as they were hard up. He cited instances in support of his assertion that it was impossible for a butter merchant or grocer to ascertain the percentage of water in butter.

Mr. Bradbury: Then you do not agree with the analysts?
Witness: How can I agree with a gentleman who says butter can be made without water? It is absurd.

Mr. Sutton said the statement he made was that butter could be made without adding water.

Mr. Bradbury said the shorthand notes would prove that his friend said butter could be made without using water.

In further examination witness said that the part of the sample he received from M'Comus he forwarded to Connell and Co., being anxious to protect the grocer, as he had guaranteed the butter to be pure.

Cross-examined he said he should hesitate to sell butter which he knew to contain over 20 per cent. of water. He would sell it if it contained 19. He had always understood that 25 per cent. in Irish butter was excessive. He had samples of Irish butter analysed which showed 18 per cent., but the article came from the North of Ireland, and was made for immediate consumption. South of Ireland butters were made for keeping, as a rule. He was aware that there had been prosecutions recently in Ireland about Cork butters for an excess of water. He had read several cases, but was not clear what they were about; they generally seemed to be a squabble between the grocer and the police as to the right of the latter to take a sample. (Laughter.) He had seen cases in Ireland in which there had been a conviction in respect of butter containing 22.1 per cent. If a man was fined for selling butter containing 19.4 per cent. he was unjustly convicted. It was the practice in Ireland to use warm brine in butter-making, but he was not aware the effect of that practice was to leave more water in the butter. The use of brine was necessary to distribute the salt evenly. There was no fraud by the grocer in this case in advertising the butter as fresh. It was freshly made.

By the Court: Irish butter ceased to be fresh in from four to seven months. Danish butter did not last nearly so long, as it contained less salt.

Robert Hickey, butter merchant, Limerick, hon. secretary of the South of Ireland Butter Merchants' Association, said that Association had in part taken up the defence in this case. As an Irish butter merchant, he said he had no incentive to do anything but sell good stuff. He desired to put the best butter he could on the market, and the Association had endeavoured to do all they could to improve the quality of Irish butter. Through the instrumentality of the Association, 206 samples of Irish butter were taken between March and September of last year and sent to Professor Tichborne, of Dublin, for analysis. Speaking of 152, he said 80 per cent. contained over 15 per cent. of water. These samples were fairly taken, and fairly represented Irish butter. He did not think it was true, as asserted by a witness for the prosecution, that four or five years ago Irish butters only contained from 10 to 12 per cent. of water.

By the Court: He did not make any analysis at that period.
(To be continued.)

THE CENTRAL CHAMBER OF AGRICULTURE AND BEER.

A Council meeting of the Central and Associated Chambers of Agriculture will be held on February 6th, to consider the desirability of charging all brewers who use sugar or any substitute for barley malt and hops in beer an additional licence and extra duty.

The stupidity of this resolution is exactly what might be looked for from the Central Chamber. Why has not some member of that body sufficient sense to suggest the only real remedy for the suppression of swindling in beer?—viz., that only the product of malt, hops, water, and yeast should be permitted to be called *beer*, and that similarly, as has been the case with butter, imitations should be called by some other name, as margarine is. "Sugarine," "Rizine," "Swipesine," "Filthine," are all names which might legitimately be applied to beer as it is now concocted. The *Mark Lane Express*, which we are pleased to note is becoming guilty of occasional lucidity, corroborates our reasons for reform in beer by the following important facts:—

"The number of common brewers—i.e., brewers of beer for sale—in Great Britain and Ireland was in 1880, at the time of the repeal of the Malt Tax, upwards of 21,200, of whom no less than 2,183 were beginners, and 16,770 brewed less than 1,000 barrels of beer per annum. One brewer only just exceeded the million barrels per annum.

In 1892 the total number, including new beginners, had fallen to the amazing extent of one-half, namely to 10,655. 8,766 of these brewed under 1,000 barrels per annum, and two very considerably exceeded a million barrels each.

Comparing the sugar used for twenty years, we find that the quantity of sugar brewed in 1872 was only 260,610 cwt. In ten years (1882) this had more than quadrupled to 1,142,845 cwt., and in 1892 it again nearly doubled, being 2,096,720 cwt. This vast quantity of sugar displaces over 1,000,000 (one million) quarters of malt. In addition, an unknown but vast and rapidly increasing quantity of barley malt is displaced by rice, maize, and other substitutes of which at present no entry is made by brewers. These, probably, equal nearly another million quarters.

Looked at another way, the relation of malt to sugar used is thus:—

1872. (mean average) 193 shels malt to 1 cwt. of sugar.

1882. " 47 " " 1 "

1892. " 27 " " and other substitutes to 1 cwt. of sugar.

But whilst the two largest brewers last year still maintained the proportion of 348 bushels malt to 1 cwt. of sugar, very many of the large brewers used only twelve bushels of malt, and one (the ninth largest) used only six bushels of malt to 1 cwt. of sugar.

Turning to districts, we find that whilst in Dublin nearly 320,000 bushels, or 40,000 quarters, of malt are used to each hundredweight of sugar, that in South London, Maidstone, Derby, Warrington, Birmingham, and Stourbridge, the average is only 12 bushels, and in the case of one great brewery it fell in one year alone from 44 to 6 bushels.

This vast displacement of barley malt decreases the demand for and price of barley; it paralyses the malting industry, and so deprives farmers of a most valuable reserve of skilled workmen who come from the malt-house to the fields just when required; and it deprives stock-keepers of a large quantity of excellent food. Sugar produces no grains whatever; rice and other substitutes, very little or none.

The statement that if brewers did not use sugar foreign malt would be brewed is erroneous. Malt is not imported, and is not likely to be. A small proportion of foreign barley malt is required only when our seasons are bad. Britain still stands third in the list of the most important barley-growing States in the world, whilst our barley is unrivalled and unequalled for malting and brewing purposes.

If brewers be compelled to make entry of all substitutes, a consumer can readily determine the genuineness of his beer. It will have practically the same effect as grocers placarding margarine.

Should a licence duty be required to permit use of substitutes, no hardship is inflicted. It is perfectly optional. No brewer will take out a licence if it does not pay. If no licence be taken, consumers will get pure beer—the genuine product of malt and hops.

Many brewers will find it still profitable to use substitutes, licence and duty notwithstanding. Say 3,000 brewers pay ten guineas for a licence to use a substitute, and 1,500 pay fifty guineas, and these men pay a duty of 1s. (one shilling) per barrel on all beer brewed by them, the Revenue will be enhanced by nearly £1,500,000 per annum. This would prove a useful item in the next Budget. It will cost nothing to collect, and if collected the gain to all barley-growers, malsters and consumers of beer will be very great. All these classes accordingly may consistently join with the Central Chamber of Agriculture in urging the Chancellor of the Exchequer to make all users of substitutes specifically enter the materials used; to take out a licence to authorise use; and to pay a duty over and above that now paid on every barrel of beer that is not genuine and pure. This will kill unfair competition; it will lead to honesty in trading; the consumer will get a pure article, or knowingly buy an impure one; and it will be a boon worth the getting."

But as to its suggestions!

It is in truth pitiable to see such rank ignorance displayed by the representative Central Chamber, and by the leading agricultural journal. Is it too late for all concerned to exercise a little

common sense? It is not veiled protection, or £1,500,000 per year extra revenue that the public want. It is honesty, and the only way to compel the brewer to once more become an honest man is to define beer as the product solely and wholly of malt, hops, water, and yeast; and if he sells his concocted chemical swipes as beer, to prosecute him under clause 6 of the Sale of Food and Drugs Act for selling an article as beer which is not of "the nature, substance, and quality demanded." We must confess, however, that we have scant hope, so far as the *Mark Lane Express* is concerned. We have proved a hundred times the absolute scientific incompetence of the Somerset House Inland Revenue Chemists. We have analysed their analyses, washed and dressed and put into scientific formulæ their inaccurate calculations, and, as every scientist knows, we have demonstrated irrefragably that they are absolutely incapable as chemists. Yet in the face of this common scientific knowledge, what do we find the *Mark Lane Express* doing, but actually touting for Mr. Richard Bannister to be Chief Agricultural Analyst. Says a *Mark Lane Express* writer:—

I learn that it is highly probable that Mr. Bannister, deputy-principal of the laboratory at Somerset House, may accept the post of referee under the Agricultural Fertilisers Act—that is, providing it be made of sufficient value. And, mind me, Mr. Bannister is an able man. He has spent no less than thirty-seven years at Somerset House, and it is undeniable that during that time he has given great satisfaction to the authorities. Of course, Mr. Bannister, as a business man—and this we must expect—would consider the value of his position. It must not be forgotten that the laboratory principalship is worth £1,000 a year, and, of course, unless the post of referee be made of at least equal value, there would be no object in Mr. Bannister accepting it. Mr. Bannister certainly would be an excellent man for the position. I think of him not only as the deputy-principal of the laboratory at Somerset House, but I remember him as the Chairman of the Civil Service Association. At Somerset House he has had a training for the new position which is simply unequalled. Think of it—as many as 50,000 samples a year are analysed at Somerset House. Of course, many of these have nothing to do with agriculture. They include such things as gold, lace, and pickles for the India Office, and even leather lining for the caps of Metropolitan Police. But all the same, Mr. Bannister has been accustomed to the habit of close investigation, and this alone would, I have not the slightest doubt, make him an excellent officer for the position.

Every expert analyst who knows that Mr. Bannister knows nothing of agricultural analysis, save the few scraps of knowledge he has lately been acquiring, must feel as we feel a sense of deep disgust at the brazen logrolling that is being employed to pitchfork Mr. Bannister into a position, for which he is absolutely incompetent. The country has had enough of that Somerset House gang who have made beer swipes, and legally protected food adulteration, and as the *Mark Lane Express* is apparently so ignorant of all this, we would in the kindest manner, suggest to it that its editor should ask any recognised agricultural chemist if Mr. Bannister is a fit man for the post of Chief Agricultural Analyst or head of the Somerset House laboratory. We have no doubt as to the answer.

SUPPRESSING BUTTER FRAUDS IN BELFAST.

At Belfast, in the Summons Court, on January 2nd, John Kinney, 17 and 19, Sussex-street, was charged with selling margarine as butter. Mr. Spiller, who prosecuted, said he had been instructed to press for severe penalties in cases in which a conviction would be gained, as the rather light penalties which had been hitherto imposed had done nothing to check the growing evil. David M'Master, Food Inspector, said that on December 2nd he employed a man dressed in workmen's clothes to go into the defendant's shop, and purchase, along with other groceries, one pound and a half of butter. Witness remained outside until he got a given signal from the man inside, when he entered. He took the butter, and told Kinney that he was taking it for the purpose of analysis, and divided it into three samples, one of which he kept, a second he gave to the defendant, and the third he took to Dr. Hodges, the Public Analyst. Dr. Hodges certified that the substance was margarine. Their Worships imposed a fine of £5 and costs.—Peter Hanna, 112, Beersbridge-road, was summoned for a similar offence. Mr. James Donnelly defended. Mr. M'Master said he went into the defendant's shop, and seeing at the far end a large dish with three pieces of what appeared to be butter, asked for one and a half pounds of it. He told the boy who sold it to him that he wanted it for the purpose of analysis, and the boy persisted in saying it was butter. A sample was sent to Dr. Hodges, who certified it was not butter, but margarine. The defence was that the margarine had been only got in the night before this sale, and Hanna went out early the next morning without having time to label it, and that Comiskey, who sold it, had been only in the place a few days, and did not know the difference between butter and margarine. Mr. Hodder said that in such cases there was not the least possible use of putting on a small penalty, although they did not wish to show any vindictiveness. Unless a very substantial penalty was imposed the thing would not be put a stop to, and he did not see how the Bench could make a difference between that and the previous case. A fine of £5 and costs was accordingly imposed.

COLONIAL BUTTER.—The New Zealand Shipping Company's steamer Ruapehu arrived having on board 11,855 cases of butter and 1,228 cases of cheese. This is the largest cargo of dairy produce yet received from New Zealand.

DISEASED MEAT PROSECUTION IN NEWCASTLE.

At the Newcastle Police Court, on December 22nd, John Thomas Little, butcher, Jarrow, was summoned for being the owner of two diseased carcasses of mutton found in a slaughter-house in the Cattle Market on the 5th December. It appeared that defendant sent two sheep, one of which was dead, to a slaughter-house, to get dressed. They were seized by the Inspector. The owner afterwards made several applications to get the carcasses away, although he was told they were diseased and unfit for food. Dr. Armstrong, Medical Officer of Health, described them as being emaciated, flesh pale, and dropsical, the result of liver disease. The Bench considered the case a bad one, and fined defendant £5 and costs.—Frederick Campbell, Alnwick, pleaded guilty to being the owner of four quarters of diseased beef that were found in the Cattle Market on the 14th November. The evidence showed that defendant had bought the carcass and hide from a farmer near Alnwick for £1, and sent it to Newcastle for sale as human food.—Dr. Armstrong stated the animal had been extensively affected with tuberculosis, and the flesh was quite unfit for food. A large portion of the pleura had been removed with a view of concealing the disease.—The Bench considered it an aggravated case, and fined defendant £10 and costs, or two months' imprisonment. Mr. R. S. Holmes prosecuted on behalf of the Corporation in both cases.

WHISKY AND 37 PER CENT WATER.

At the Spalding Petty Sessions, on December 19th, William Chamberlain, publican, Pinchbeck West, was summoned for selling on November 15th, one pint of Irish whisky, which was adulterated. A police-constable deposed to purchasing one pint of whisky by direction, for which he paid 2s 8d. He then gave the defendant a printed notice. Supt. Jarvis produced the certificate of Mr. Southwell, Public Analyst, which stated that the whisky was 37·8 degrees under proof; 25 degrees was the maximum allowed by law. The defendant explained that his housekeeper, who had been with him four years, told him that she put some water to the whisky to make up the pint, thinking it did not matter much! The Chairman: It would very soon ruin you. The Bench reduced the penalty to £1 and costs, the Chairman remarking that they were sorry the defendant had such a person in his house.

MARGARINE AS BUTTER.

On Thursday, December 21st, D. Haddow & Co., 24, Downhill-street, Partick, were brought before Sheriff Birnie at the instance of D. Willock, Sanitary Inspector, for having sold to Assistant-Inspector McDonald half-a-pound of butter which was not of the nature, substance and quality of the article demanded, in respect that it contained 97 per cent. of fatty matter not derived from milk. They were found guilty and fined £3 10s., including expenses.

EXHIBITION WHISKY.

At the Police-court, Wolverhampton, on December 20th, William Kettle, who has charge of the bars at the Star Theatre, was summoned for selling spirits diluted beyond the limit allowed by the statute. The evidence showed that during the holding of a recent trades exhibition in the Drill Hall, refreshment bars had been taken by Mr. Aldridge, of Queen-street. He had, however, not obtained a full licence, and in order to sell spirits had obtained the licence of the defendant Kettle. Samples of the whisky sold at the bars were obtained by Mr. Allwood, the Local Inspector, and although the spirits were purchased at the price of 4s. per pint, they were found to be very much below the ordinary standard. For the defence it was contended that one of Mr. Aldridge's assistants had put in a quantity of water in a mistake. A fine of 40s. and costs was imposed, and a similar penalty was ordered to be paid with regard to a second charge of a like character.

POISONING BY HOME-MADE WINES.

The *British Medical Journal* says:—"On this subject we have received rather a startling communication from Mr. G. A. E. Roberts, of Twyford, Hants. He has had over 30 cases, during the last twelve months of lead poisoning from drinking home made wine and beer, brewed in glazed earthenware pans. He is sure that this only represents about half of the cases, as many are not sufficiently ill to seek advice. According to Mr. Roberts, if other country districts suffer in the same proportion, there must be somewhere about 50,000 cases a year in England. He points out that if the use of lead in glazed pans was prohibited, or they were marked in some way to show that it was unsafe to brew in them, a great amount of sickness would be prevented. Notices might be posted up in villages calling attention to the danger of using these vessels for such purposes."

MARGARINE AS BUTTER.

At Thames, John Bonner, of Salmon's-lane, Limehouse, was summoned, at the instance of the Limehouse District Board of Works, for selling butter adulterated with 65 per cent of foreign fat. Mr. Dickinson fined defendant £5 and 2s. costs.

YEAST !! YEAST !!**JANSEN & COMPY.,**

WESTMOLENSTRAAT, SCHIEDAM (HOLLAND).

Gold Medal, Amsterdam, 1886.

A GOOD RELIABLE PURE YEAST IS

 **JANSEN & CO.'S PARROT BRAND.****TRY IT !!!**MAY BE ORDERED DIRECT FROM OUR MANUFACTORY
FRESH SHIPMENTS DAILY.**FOOD POISONS.**

M. Juhel Rénory (*Annales d'Hygiène Publique*, August, 1893) analyses the symptoms which supervene after the ingestion of unsound meat, especially pork. He finds the effect proportionate to the quantity taken, unless putrefaction continues in the alimentary canal owing to the inactivity of the digestive processes. He considers the fundamental symptoms to be (1) foetid diarrhoea, nausea, vomiting (accompanied by a feeling of loss of power), some hours after partaking of the suspected food. (2) After an interval of twenty-four hours polymorphic eruptions appear (urticarial-scarlatinal-roseolous), with or without fever. The erythema multiforme of Hebra may be thus caused. (3) In serious cases a typhoid condition occurs—stupor, delirium, digestive derangement, hæmorrhages, feverishness. (4) In a more advanced stage—recovery being still possible—all the complications of specific fevers may develop, chiefly localised on serous membranes. (5) The only necessary condition is the introduction into the organism of poisons originating in food—particularly through putrefactive changes.

MONTROSE AND MILK ANALYSIS.

Mr. Wilson, Superintendent of Police, reported to a meeting of Police Commissioners, on the 11th, that on 10th November last, twelve samples of milk were analysed, and that the quality of the milk was similar to the samples analysed in October. These were considered fairly satisfactory, but in several samples there was still much room for improvement, the milk from some dairies being very inferior.

RENFREWSHIRE CITY COUNCIL AND ADULTERATION.

Mr. Charles Harding, Chief Constable of Renfrewshire, reported that during the year ending 15th May last, as Inspector under the Food and Drugs Acts, he had paid visits to the premises of dealers in provisions and groceries, and also to a great number of dealers in milk throughout the county. On the whole, he had found that the traders had fairly well complied with the provisions of the Acts. During the year he had forwarded eighteen samples of milk and butter to the Public Analyst. Six of these samples were found to be margarineous, or adulterated, while the other twelve were genuine articles. He had instituted proceedings and obtained convictions against the traders from whom the adulterated articles had been received. The total fines imposed in these cases amounted to £20 12s.

A WARNING TO TRADESMEN.

At Lambeth, on Dec. 21st., Charles Wootton, of Gipsy-road, West Norwood, was summoned by Mr. H. T. Wiggs, Inspector under the Food and Drugs Act to the Lambeth Vestry, for having unlawfully refused to sell him an article required for analysis. Mr. H. J. Smith, Clerk to the Lambeth Vestry, appeared in support of the summonses, and stated that on the 30th November a woman employed by the Vestry for the purpose, went into the defendant's shop and purchased some butter. When the purchase was completed Mr. Wiggs went into the shop, but directly he saw the Inspector the defendant seized the butter from the woman and declined to let the Inspector have it. Subsequently, upon being remonstrated with, the defendant handed a parcel of butter to the Inspector, but whether it was the same as was served to the woman, it was, of course, impossible to say. In answer to the summons, the defendant explained that by inadvertence he gave the woman some butter that was rank, and remembering what he had done, took it back to change it. Mr. Biron said it would be perfectly impossible for Vestries to work this Act if conduct of this sort were passed over. He ordered the defendant to pay a fine of £5 and 2s. costs.

THE EXCESS WATER IN WHISKY TRADE.

At Upton-on-Severn Police-court, on December 28th, Mary Ann Coates, of the Barley Mow Inn, Dunn's-lane, was charged with selling whisky below the legal standard of strength. Police-constable Huren purchased a pint of whisky, for which he paid 2s. 8d., on November 23rd. On Superintendent Harrison telling the defendant that it was bought for analysis she said, "I know you will find it wrong; they go in for quantity here, and not quality." Dr. Swete's analysis proved it to be 40 per cent. under proof. The lowest permitted by Act of Parliament was 25 per cent. Defendant was fined £1 and costs.—James Newell, of the Swan Inn, Dunn's-lane, was charged with a similar offence. In this case the whisky was 35 per cent. under proof. It was proved to be drawn from the jar just as it was received from a Malvern spirit merchant. The Bench said it was a hard case, but they had to protect the public, and the defendant had his remedy against the merchant. Fine £1 and costs.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
Powell's Balsam of Aniseed—Coughs and Bronchitis.
Powell's Balsam of Aniseed—Coughs and Hoarseness.
Powell's Balsam of Aniseed—Coughs and Lung Troubles.
Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
Powell's Balsam of Aniseed—Coughs.—Established 1824.
Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
Powell's Balsam of Aniseed—Coughs Relieved Instantly.
Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
Powell's Balsam of Aniseed—Coughs.—Trade Mark.
Powell's Balsam of Aniseed—Lion, Net, and Mouse.
Powell's Balsam of Aniseed—1s. 1½d., 2s. 3d.

PROSECUTIONS AT LIVERPOOL.

At Liverpool, on December 27th, Arthur Robinson, 161, Walton Beck-road, was fined 20s. and costs for selling coffee mixed with 55 per cent. of chicory. The coffee was labelled "mixed," but the adulteration was considered excessive. Defendant was also fined £5 and costs for selling "butter" containing upwards of 80 per cent. of foreign fats.—William Hall, 160, Kensington, for selling coffee mixed with 45 per cent. of chicory, was ordered to pay 20s. and costs; and for selling "butter" adulterated with 80 per cent. of foreign fats, he was mulcted in a penalty of £5 and costs.—Thomas Simpson, 100, North Hill-street, was fined 10s. and costs for exposing for sale margarine which was not labelled.

PROSECUTIONS AT BOOTLE.

Before Messrs. J. Smith, W. A. Matheson, and Alderman Cain, presiding Magistrates at the Bootle Police-court last week, Margaret Lewis, who carries on business as a grocer at 24, Brown-street, was charged on a summons with infringements of the Food and Drugs Act. Inspector Ferguson deposed to visiting the defendant's shop on the 29th ult., and purchasing through an agent samples of butter and coffee. According to the Analyst's certificate the butter was adulterated with 94 per cent. of water, and upwards of 80 per cent. of foreign fat, while the coffee contained upwards of 40 per cent. of chicory. Mr. Maunder, for the defence, pleaded guilty to a technical offence, but the defendant, he said, had acted bona fide. Owing to the defendant's illness she had not had an opportunity of examining the goods when delivered from the wholesale dealer, who had sent them in mistake. The bench offered to adjourn the case for the attendance of the dealer, but the defendant objected to this course. She was fined 10s. and costs, or fourteen days.—A provision dealer named Arthur Glover, of 12, Knowsley-road, was summoned for selling adulterated butter. A sample had been purchased from the defendant's shop, which on being analysed was found to contain 10 per cent. of water and upwards of 80 per cent. of fat other than butter. After the sale, Inspector Ferguson went into the shop and saw that the butter was unlabelled. Defendant, on seeing the Inspector, took a margarine label from a glass case and placed it on the tub from where the sample had been supplied. A penalty of 10s. and costs was imposed, with the alternative of fourteen days' imprisonment.—Charlotte Ford, a shop-keeper, living in Gower-street, was summoned for selling diluted acetic acid as vinegar. It was shown by the evidence of Inspector Ferguson, that a pint of vinegar was purchased for 21., which on being examined by an Analyst was found to contain 99 per cent. of acetic acid, with a little artificial colouring. The Analyst added that the sample was an imitation of vinegar. Defendant was ordered to pay 10s. and costs, and the Analyst's fee.—A summons was heard against John Duffey, a grocer, of Irlam-road, charging him with selling coffee which had been adulterated with 35 per cent. of chicory. When a sample was purchased for the police the defendant said the coffee was pure. A fine of 10s. and cost was imposed.

VINEGAR PROSECUTION.

At Nuneaton Petty Sessions, Richard Samuel Green, grocer, Nuneaton, was summoned by Inspector Poultney, under the Food and Drugs Act, for selling an article purporting to be vinegar, which was adulterated with acetic acid and water coloured brown, at Nuneaton, on November 14. Defendant pleaded guilty. Mr. J. H. Bland (Clerk to the Local Board) prosecuted. Defendant said he bought the article as "wood vinegar," whereas Inspector Poultney asked for malt vinegar. The bench inflicted a fine of £1 9s. 6d.

MARGARINE AS BUTTER AT BURNLEY.

At Burnley, on December 27th, William Edmondson, grocer and provision dealer, of Roberts-row, was summoned for a breach of the Food and Drugs Act, at the instance of Inspector Williams. The Town Clerk (Mr. W. T. Fullalove) prosecuted, and Mr. Garnett defended. The Inspector stated that on November 23th he visited defendant's shop and asked for 1 lb. of butter, for which he paid 1s. 2d. He told the defendant's wife that he intended to have it analysed, and the examination of the Public Analyst showed that the butter was adulterated, so that it contained 8½ per cent. of water, and upwards of 80 per cent. of fats other than butter. Mr. Garnett admitted that an error had been made, but not wilfully. By some mischance a piece of margarine had got on to the top of the butter, and was sold to the Inspector. The Bench fined the defendant £1 and costs.

MARGARINE RESTRICTIONS IN PARIS.

The Prefect of the Seine, has issued an order forbidding the admission of margarine, oleomargarine, and generally any substance used to replace butter into the Paris Markets. The sale of mixtures of margarine, fat, oil, or other substances with butter, in any proportions, is also forbidden.

THE FLINTSHIRE C.C. AND ADULTERATION.

The General Purposes Committee reported that four of twenty-three samples of food analysed were adulterated in the proportion of 17½ per cent. One sample of lard and two of whisky were adulterated. One of the lard samples contained cotton seed oil. It was said to be sold as "lardine," but the wrapper had "margarine" printed upon it. The Council confirmed the minutes.

NOTICE TO READERS.

Back numbers of the Journal are now very scarce, and can only be supplied in future at 3d. per copy when over a month old. Vols. 1 and 2, including index, 20s. each. Index separate, 1s. each.

FUTILE LEGISLATIVE INTERFERENCE.

The futility of legislation designed to regulate private or personal affairs, and to take care of some particular class in the community, is a matter of abundant demonstration, and the artificial butter legislation affords one of the latest illustrations of it. In Minnesota the manufacturers of butter from milk had enough influence with the Legislature to procure the enactment of a law that all butter made from fat should be coloured pink. This is the same as though the *hand weavers* had procured a law requiring that all cloth woven on a *power loom* should be punched full of holes. The public taste so imperatively insists that butter should be yellow, that the honest farmers who protest against the adulteration of food by other people habitually dye their butter to suit the consumer's eye. We wish we could believe that this colouring matter were the only adulteration the dairy-men resort to; there is, unfortunately, evidence that the oleo they protest against openly they buy in secret and mix with their creamery butter. In this State the farmers did not have quite enough influence to procure so absurd a law as that of Minnesota, but they went as far as the United States law would permit in the way of direct prohibition of the sale of oleomargarine and butterine, articles as wholesome, when properly made, as lard or dairy butter itself. A law to prohibit the importation of these articles from other States would have precipitated a conflict with the Federal Authorities, so the Legislature prohibited their sale except in the "original packages," which are protected by the Federal Constitution. The Empire State treats oleomargarine as Iowa treats intoxicant liquors.—*N.Y. Journal of Commerce and Commercial Bulletin.*

IMPORTANT TO DAIRYMEN.

At Worship-street Police-court, on January 7th, a milk dealer and dairyman named Handsby was summoned by the Sanitary Inspector of St. Luke for selling milk from which 75 per cent. of the cream had been abstracted, and Mr. Ricketts, who defended, said that the case of "Lane v. Collins," which had, on a case stated, been carried to the High Court, had decided the point he had to meet. The milk in question was sold as skim milk at 3d. per pint, and the case he referred to had decided that where milk was asked for, skimmed milk satisfied the demand made. Mr. Bushby said he was acquainted with the case, but thought it by no means clear that it applied as extensively as some persons thought. The argument before the High Court had been as to whether an offence had been committed against the provisions of Section 6, and the High Court had held that, as the purchaser had asked for milk and been supplied with milk, though the milk had been "skimmed," he had got what he asked for, and no offence had been committed. That was the magisterial finding, and the Court, not going outside the point raised, upheld the finding. But he (Mr. Bushby) had always had it in his mind that if the Magistrate had found on the facts that the sale of the skimmed article was "to the prejudice of the purchaser" there must be a conviction under the statute. He should, therefore, hear any case brought before him under the section, and determine it on the evidence, until it was laid down that the decision of "Lane v. Collins" was binding. Of course Mr. Ricketts would have the pleasure of taking a case on the new point. Mr. Ricketts said he hoped to save his client the trouble and expense of that course on this occasion, as he had a further objection, i.e., that the summons was made returnable "within a less period than seven days after the date of service." Only six days had, it seemed, been allowed, and Mr. Bushby said the objection was fatal. Rudd, the Sanitary Inspector, said it was not the fault of the prosecution, and a discussion took place as to whether the summons could not be amended. Mr. Bushby finally decided that it could not, and it was ordered to be dismissed. It was then stated that as the Act required the proceedings to be taken within 28 days of the taking of the sample, the prosecution must fall through, as that time had expired. Mr. Bushby advised the Sanitary Inspector to consult the Vestry solicitors, and if asked he would grant a special case.

At Marylebone, on January 4th, Henry Anthony Lester, of Stoke Grange, Tetworth, Oxon, was summoned for sending to London three churns of milk, which were adulterated by the admixture of 10, 12, and 14 per cent. of water. Thomas Parker, Inspector of Nuisances, proved taking samples of the milk in question on its arrival at Paddington Railway Station. The Analyst's certificate showed the milk to have been adulterated by the percentages mentioned. Mr. Enderby Handsley, proprietor of Handsley's Calow Park Milk Company, said he had an agreement with the defendant that he should supply pure milk. The churns from which the samples had been taken were debited to the company's account. Mr. Leicester, barrister, who appeared for Mr. Lester, said his client repudiated the suggestion of personal dishonesty. Towards the end of October he met with an accident, and was compelled to leave the management of the farm to his men for nine weeks. The cake ran short, and the men, without the consent of the defendant, fed the cows chiefly upon turnips. The defendant was of opinion that that would account for the poorness of the quality, and on hearing of the fact he gave instructions for the ordinary food to be reverted to. Since the change in the food two samples of milk had been taken, and although they were not of the usual quality, they were found to have greatly improved. Mr. Rose said that after making due allowance for the excuse that the cows had been fed upon turnips without the knowledge of the defendant, he could not understand why the amount of dilution should vary,

and one should contain 10, another 12, and another 14 per cent. of water. He (the magistrate) was forced to the conclusion that water had been added. The fact of his having sustained a serious accident and being unconscious of the dilution was an extenuating circumstance. He fined the defendant £2 in respect of each churn, and 2s. costs, making in all £6 6s.

BAKING POWDER AGAIN.

At Edgware Petty Sessions, Sarah Brown, of Little Stanmore, was summoned for selling baking powder adulterated with 20 per cent. of potash alum, on November 22nd. The case was adjourned for a month, pending the decision of the Court of Queen's Bench as to whether baking powder is an article of food.

AN OBJECT LESSON IN ADULTERATION LAW.

At Westminster Police-court, on January 9th, George Wallington, Rutland-terrace, Pimlico, was summoned by the St. George's, Hanover-square Vestry, under the Adulteration Act, for selling as butter a compound containing 20 per cent. of foreign fat. The defendant gave evidence that the butter was invoiced to him simply as "Dutch," and that he only got 1d. per lb. profit on it. He bought it from Mr. Stanford, of Sussex-street, Pimlico, who in turn deposed that he purchased it from Mr. Harris, of West Smithfield. Mr. Hitchens, who prosecuted, said that either party could have protected himself with a warrant. Mr. de Rutzen remarked that entering into a sort of history of the butter, after the manner of the house that Jack built, did not in the slightest degree exonerate the seller to the public. The defendant might have been imposed upon, but as he had not chosen to protect himself he would be fined £5 and the costs.

COVENT GARDEN AND UNSOUND FRUIT.

AN APPEAL TO BE MADE.

At Bow-street Police-court, on January 5th, William Nicholas White, appeared to a summons charging him, as managing director of W. N. White and Co. (Limited), fruit salesmen, of the Floral-hall, Covent-garden, and 10, Russell-street, with selling oranges unfit for the food of man. Mr. Fawcus prosecuted on behalf of the Strand Board of Works; Mr. Bonner appeared for the defendant. Thomas Frederick Strutt, Sanitary Inspector, stated that on the 22nd of December, George Rowe, a costermonger, took to his office two boxes of oranges. The contents of one box were all—or nearly all—rotten, and the box itself was stained by the juice which ran from the oranges. He took the box to Mr. Lushington, the Magistrate at Bow-street, and he ordered the fruit to be destroyed. The oranges in the other box were in fairly good condition, although some of them were speckled. George Rowe, the costermonger referred to, deposed to purchasing the two boxes in question at defendant's place by auction. Counsel for the defence produced a copy of the rules said to have been hung in front of the rostrum, stating that goods were not sold by sample, and must be taken with all faults and defects, and the witness stated that he did not see the rules. Mr. Bonner, for the defence, said that he relied upon the 47th Section of the Public Health Act, which provided that a man who sold unsound food was liable to a penalty unless he could prove that at the time he sold it he did not know it was in that condition. Defendant was only Managing Director of his Company, and they sold goods on commission. If they were made liable for all the fruit they sold, it would be a very serious thing. He contended that the auctioneers were protected by the conditions of sale. The defendant was only the servant of the Company, and could not be made responsible. The defendant was called, and stated that at the time he sold the oranges he had no reason to believe that they were in a bad condition. Cross-examined, the defendant said that the capital of the Company was £60,000, and he held 12,000 shares. If he were a buyer he would inspect the bulk, and not buy "a pig in a poke." Mr. Lushington came to the conclusion that the defendant was liable, and would have to pay a fine of £10 and costs of summons. Notice of appeal was given.

MR. WILLIAM BROWN'S LATEST DODGE.

At Thames Police Court, on January 7th, John R. Samuel, of 12 Maritime-street, Mile-end, pleaded guilty to selling skim milk adulterated with 10 per cent. of added water. Charles Cox, Sanitary Inspector, said when he bought a pint of skim milk defendant said, "You know what you are buying?" The Analyst's certificate showed there was 10 per cent. of added water in it. Defendant said he had an accident, and had to make it up with water. He was in the service of Mr. Brown. Mr. Dickinson decided to hear the case against the defendant's employer before giving his decision.—William Brown, of South-grove, Mile-end, the employer of the last defendant, was summoned for a similar offence. Defendant pleaded not guilty, and said the Inspector admitted two other samples were taken the same day, and these were found to be genuine. He sent the milk out as he received it. It was his man who had tampered with it. He was unable to prevent that. Mr. Dickinson said he must convict, and defendant would be fined £20 and 23s. costs. Samuel would be fined 40s. and 2s. costs.

ADULTERATED PEPPER.—At the Wolverhampton Police-court, on January 5th, William Ellis, grocer, Prince's End, was summoned for selling pepper which contained 15 per cent. of ground rice. It was pointed out by Mr. Morris, the Inspector, that while rice was 3d. a pound, pepper was 1s. 8d. A fine of £1 and the costs was imposed.

THE PRESS ON W. T. STEAD.

The *Medical News*, Philadelphia, says—"Mr. Stead's Remarkable Doings.—Our wonder is ever called forth afresh at the unlimited impertinence and successfulness of the Mephistophelean quack. However crushed by exposure, however deep the disgrace, he rises phoenix-like from the ashes of one diabolic scheme to start anew with another still more preposterous and brazen. The stupidity and gullibility of human nature is always equal to the challenges of its inordinate masters. The career of Stead is in evidence. He should have realised a satisfying fortune from the Mattei cancer-cure swindlers. Simple, plain, unadulterated water was sold at about a dollar a bottle under the name of white, green, and red electricity, until the Medical Investigating Committee cornered him up, and he was forced to confess that his partners were unmitigated scamps. Food and Sanitation, a brave English journal, says the thieves derive a profit from the Mattei 'cures' of 500,000 dols. a year. How sincere was his 'shame' and his 'denunciations' is shown by the fact the English agent of the Mattei swindle is a certain A. J. L. Gliddon: Stead is now pushing a scheme to get 100,000 persons to subscribe 5 dols. each to found a new paper. The first number of the new paper is largely devoted to editorial interviews and puffs of the Mattei agent, Gliddon, and his quack cures, but especially to a 'drunk-cure,' also worked by Gliddon. The Pooch-Bah Gliddon as drunk-curer demands 100 dols. from his dupes, boards and treats them for a month at a net profit from the one hundred patients he says he already has, of something like 6,000 dols. a month. The crowning touch of marvel is not wanting in the fact that Stead announces that his new journal and his personal role in life is 'the rooting out of mean fraud, and the punishment of the scoundrels who would steal under the cover of business.' Amazing products of nineteenth century civilization are these Steads and Steadisms! But it is still more amazing that poor, stupid, deluded human nature never tires of welcoming and loving them."

ROOTING OUT THE SPURIOUS YEAST FRAUD.

Mr. John W. Beeby, grocer, Skirbeck, was summoned at North Holland Petty Sessions, on the 5th, for selling yeast adulterated with 16 per cent. of potato starch. Defendant pleaded that he sold the yeast in exactly the same condition as he received it from the wholesale house, and he was fined 5s. and costs.

We warned grocers over three months ago of the danger and prevalence of yeast adulteration, and Mr. Beeby has only himself to blame for his misfortune. If he bought it as pure yeast he ought to prosecute the wholesale house for damages.

CORRESPONDENCE.

EXCESS WATER IN BUTTER.

To the EDITOR of FOOD AND SANITATION.

SIR,—Under this heading in your issue of the 6th inst., page 5, you report a case tried at East Kirrier Petty Sessions, in which the defendant's solicitor is stated to have said, "The Analyst's certificate contained the additional words 4 per cent. of water above the maximum allowed by the Somerset House Authorities." Will you allow me, as the Analyst, to point out that the certificate contained no reference whatever to Somerset House, nor to any standard that may have been adopted by the Analysts there.

Your obedient servant,

BENEDICTE KITTO.

30 and 31, St. Swithin's-lane, London, E.C.

January 10th, 1894.

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"WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

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Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

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LENNOX'S WHISKY

36/-

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PER DOZEN CASH.

Delivered within London
Carting Circuit, or Carriage
Paid to nearest Railway Station
in Great Britain.Do not drink Blends of Malt Grain
and Potato Spirit.Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.

Food and Sanitation.

SATURDAY, JANUARY 20, 1894.

OUR IDLE, USELESS BOARD OF TRADE.

The Italian political hack who draws £2,000 per year from England for helping every other country to cut the throat of England's trade, and the gang of useless "Tite Barnacles" who assist him to squander £179,090 per year of taxpayers' money for the maintenance of that farce the Board of Trade are at last being turned upon by their victims. We have been, hitherto, alone amongst newspapers in our efforts to secure the proper administration of the Food and Drugs Acts, Merchandise Marks Acts, and Margarine Acts, and in demanding that the Board of Trade enforce the law to prevent foreign ham, bacon, lard, etc., being sold as English or Irish. Ulster provision merchants some time ago appointed an Inspector to report on the extent of the sale of hams, bacon, etc., under misleading descriptions as home products, and placed a mass of evidence, and cases needing prosecution, before the Board of Trade, but the idlers responsible for that department replied through the chief permanent one, "The Board of Trade are not disposed to institute proceedings." This then is the amount of assistance, or rather protection from foreign free fraud, English, Irish, Scotch, and Welsh traders may look to for an expenditure of £179,090 per year for the Board of Trade, £1,800 per year of which goes to keep the writer of the above disgraceful refusal at the head of a department that might, with all truth, be described as a BOARD TO THROTTLE ENGLISH AND IRISH TRADE AND STARVE BRITISH WORKMEN.

The Belfast Chamber of Commerce on these facts, contented itself with the following resolution:—

"That the Council of this Chamber, having heard of the indisposition of the Board of Trade to institute proceedings in cases which have been submitted to them by that association—in which the Board believe there would be found to be little difficulty in

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Large Pots, 13½d. each, with full Instructions.

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Samples sent Free by Post on receipt of value.

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Awarded 60 Gold and Silver Medals and Diplomas.

securing convictions, hereby expresses its surprise that such an attitude should be adopted by the Board of Trade, having regard to the provisions of the Merchandise Marks' Act of 1891, which conferred the powers of prosecution upon the Board, and this surprise is based upon the assumption that when the amending Act referred to was adopted Parliament did not contemplate that the Board of Trade would limit the exercise of those powers to cases only which present novel or exceptional features. Further, that in order to make the Merchandise Marks Act effective, this Council is strongly of opinion that Parliament ought to make provision for the duties of inspection being undertaken by the County Councils, and that the necessary financial arrangements should be undertaken by her Majesty's Government, and the members of Parliament be urged to bring this before the attention of the House of Commons should the Board of Trade persist in its indisposition to institute proceedings in cases which may be reported where there is strong probability of securing convictions."

We shall be curious to see what notice is taken in Sheffield of this scandalous act of the Right Hon. A. J. Mundella and what other Chambers of Commerce have to say upon it. A few meetings in Mr. Mundella's constituency with the shameful facts plainly put before those responsible for the continuation of that gentleman's liberty to draw £2,000 per year of public money for injuring English trade, would soon cause the Board of Trade to alter its decision, but that would be, we fear, too practical a step to hope for. There is hardly enough backbone yet in our Chambers of Commerce, and as it is much easier to "resolute," we expect to see Chambers of Commerce continue that harmless pastime and be snubbed for their pains by the political humbugs who squander their money and ruin the industries the Chambers represent.

IMPORTANT LARD CASE.

At the West Sussex Quarter Sessions, on Messrs. Kearley and Tonge, trading as the International Tea Company (Shoreham Branch), appellants; Superintendent J. J. Byrne, respondent. This was an appeal against a conviction by the Steyning Bench for unlawfully selling lard adulterated with five per cent. of beef fat. Mr. C. F. Gill, with whom was Mr. B. T. Hodgson, appeared on behalf of the appellants; while Mr. W. P. Boxall and Mr. J. E. Raven were counsel for the respondent. Mr. Boxall, in opening his case for the respondent, said that Mr. Hehner, the County Analyst, had stated that there was five per cent. of beef fat in the sample submitted to him. The appellants gave notice a few days before the hearing that they would rely on a written warranty as to the purity of the lard, and at the hearing an objection was raised that the proceedings were out of time, but that was overruled. An application was made that the third sample of lard should be sent to Somerset House for analysis, and the Magistrates granted an adjournment for this purpose. It turned out, however, that the Somerset House authorities were unable to analyse the sample because it had been enclosed in the wrong kind of paper. No evidence was adduced as to the alleged warranty, and in the result the Magistrates convicted. From this conviction the appellants now appealed on the ground that the conviction was wrong, there being no evidence to justify the finding, and that it was against the weight of evidence; further, that the proceedings were not taken within the time limited by the Statute, and that the lard was purchased with a guarantee as pure, and sold by the appellants in the same condition, they believing it to be pure. Evidence was called in support of these statements. Mr. Hehner, the Public Analyst, also gave evidence, and said he saw no reason why Somerset House should not have analysed the third sample. Mr. Gill addressed the Court for the appellants, contended that lard was a perishable article, and stated that the lard in question formed part of a consignment of a thousand pails purchased from Messrs. Armour and Co., and guaranteed as pure lard. In support of the defence a decision of the Superior Court was quoted by Mr. Gill, who afterwards called Robert Douglas Copley, manager of the provision department at the appellant's principal place of business in London. He gave evidence as to the purchase of the consignment of lard from Messrs. Armour and Co., which arrived in London in July. After a short deliberation, the Chairman remarked that the Court were of opinion that they must be bound by the last decided case, that of *Laidlaw v. Wilson*, which was almost exactly on all fours with the present case, and therefore the Court felt that the appeal must be allowed. The Court wished to remark that the warranty was never produced before the Magistrates, and it was unreasonable to suppose that the Magistrates with nothing before them could have acted other than they did, and under the circumstances the Court were not disposed to grant the appellant's any costs.

ANALYSTS' ITEMS.

The Hertfordshire County Council have appointed Mr. Voelcker as Analyst for the county under the Food and Drugs Act, at the remuneration of one guinea per sample submitted. The same gentleman was also proposed as Analyst under the new Fertilizers Act, but after some discussion it was decided that the office should be advertised.

VINEGAR PROSECUTION.

John Vine, of 96, Dale-street, Chiswick, was summoned by Inspector Clarke for selling malt vinegar which contained 70 per cent. of dilute acetic acid not produced by fermentation. The defendant did not dispute the certificate of Mr. E. J. Bevan, the County Analyst for Middlesex, but said that it should have been sold as wood vinegar. He was absent from home at the time of purchase, but he had witnesses to prove that it was not sold as malt vinegar. Mr. Curtis Bennett, however, did not accept his explanation, and fined him 20s. and 12s. 6d. costs.

CORK WHISKY.

Mr. Harrington, City Analyst, recently analysed samples of whisky which were found to be 59½ degrees under proof, instead of 25, as stipulated by the Act, and to have contained a large quantity of sherry or orange wine and sugar; but the Magistrates who tried the cases dismissed them on the queer grounds that there was no proof of the Analyst's signature to the certificate. It would appear as though Cork whisky is as much "faked" as Cork butter.

MARGARINE AS BUTTER IN BELFAST.

At Belfast on the 9th January, David Mills, 61, Euston-street, grocer, was summoned by David McMaster, Inspector of Food, Drugs, &c., for selling margarine as butter. Mr. D. F. Spiller prosecuted. The Inspector having given evidence as to getting the so called butter, and submitting it to Prof. Hodges for analysis, the defendant was fined £2 and costs. The same Inspector summoned James Gorman, 54, Calvin-street, spirit grocer, for refusing to sell butter. The Inspector said he went into the defendant's shop and wanted to buy a pound of butter, but the defendant refused to sell it to him on several occasions. A fine of 20s. and costs was imposed.

CHURCHYARD AND PANTRY.

Last July Dr. Klein was asked to visit the larder of a certain mercantile house, and to report upon some curious "pink spots" on roast beef and boiled fish, which had attracted the attention of the firm's housekeeper, and which had also been noticed by the "young men" of the establishment, who were expected to eat the beef and fish. One joint of roast beef, which had been served up for a meal, showed a considerable number of "pink patches" on the cut surface, and these extended for some distance into the intermuscular interstices of the joint. A piece of boiled fish also displayed several bright pink patches on the surface. Dr. Klein, as is the manner of bacteriologists, set to work to "cultivate" his new "pink" acquaintances; and after an incubation of 48 hours on gelatine, agar, and potato, he had the satisfaction of securing several fine pink colonies of what proved on microscopic examination to be the familiar bacterium, "bacillus prodigiosus." Two or three questions suggested themselves. First, were the bacilli dangerous? Second, whence had they come? Thirdly, how were they to be got rid of? With regard to the first point, the bacilli had not proved injurious to anybody, because, although several of the young men had frequently eaten the meat, pink patch and all, none of them had suffered in the slightest degree. Secondly, as to the place of origin. Immediately under the windows of the pantry was a disused burying ground. For years this ground has lain undisturbed, but in July last, at the time of the "pink patch" scare, workmen had opened the ground, and made clouds of dust, and with them aerobic microbes, fly in all directions. How, in the third place, were the bacilla to be got rid of? For though a particular bacillus may be harmless, he belongs to a family which is, to say the least, "suspect;" and, as yet, we are all disposed to hold that "his room is better than his company." Thorough cleaning of the larder, was Dr. Klein's recipe. Hot water, and plenty of it, on floors, walls, shelves, and utensils; for "bacillus prodigiosus" is killed in a few seconds by water at 75 deg. C. The "pink patches" themselves, whenever they appeared in fresh places, were ordered to be carefully cut off and destroyed. This remedy proved effectual, and "bacillus prodigiosus" was banished from the pantry. There is one moral here, says the *Hospital*, which narrates the story. It is that bacilli, when noticed early and faced courageously, may sometimes be got rid of before they do any harm.

QUEER CASE AT MANCHESTER.

At Manchester on January 10th, James Doherty, wholesale provision merchant, Shudehill Market, was summoned by the Manchester Corporation for selling margarine which was not duly marked and labelled. It was stated by Mr. Holland, an Inspector of the Health Department of the Corporation, that, in consequence of information received, he went to the shop of Messrs. Schofield, confectioners, Waterloo-road, and saw a cask on the floor. It was not labelled margarine. He asked for a pound of the contents of the cask, but Mr. Schofield told him that he did not sell the butter, which was used in his business. He could, however, have a sample for analysis, and one was given to him. Witness was informed by Mr. Schofield that he had bought it from Mr. Doherty as "returns" butter, an article which was not fit for the counter, but was used by confectioners. Witness observed the lid of the cask from which some lettering had been neatly scraped out. The sample that was given to him he gave to Mr. Esteourt for analysis. Mr. C. Esteourt, City Analyst, said he had analysed the sample, and found that it was not butter but margarine. Mr. W. L. Hockin, who appeared for the defendant, pointed out in the first place that Mr. Doherty had had no opportunity of testing whether the article was margarine or not, no part of the sample having been sent to him. It was the practice under the Food and Drugs Act to divide the sample into three parts, and to give one of them to the defendant, but that practice had not been observed in this case. It was, he understood, contended by Mr. Rook, superintendent of the Health Department, that the division of the sample was not necessary under the Margarine Act, but he (Mr. Hockin) argued that the procedure under the Food and Drugs Act applied also to the Margarine Act. The facts were that Mr. Doherty bought the article as butter from Mr. James Rossitter, a provision broker, paying 70s. per cwt. for it, which was a fair market price for stale butter. He sold it as butter to Messrs. Schofield for 74s. 8d. per cwt. It was evident that both Mr. Doherty and Messrs. Schofield had been deceived, and possibly Mr. Rossitter also. Mr. Rossitter was called, and said that he bought the article which he sold to Mr. Doherty as stale butter, and he sold it as such. The defendant produced the receipt to him from Mr. Rossitter, showing that he bought the article as confectioners' butter, and paid 70s. per cwt. to Mr. Rossitter for it. At that time the price of margarine in the market was from 38s. to 42s. per cwt. Mr. Rook said it seemed to him that the invoice given to Doherty was a fair defence. Under these circumstances, he would ask for a summons against Rossitter for giving the invoice. Mr. Headlam said he should dismiss the summons against Doherty. The point Mr. Hockin had raised about the division of the sample he considered a good one, and he would ask Mr. Rook to consider it.

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FOOD INSPECTION IN PARIS.

The municipal laboratory of Paris is a chemical police service. Instead of a surveillance over men, it exercises one over compositions. It searches for poisons, microbes, and adulterations just as the ordinary police searches for assassins, thieves and embezzlers. It surveys suspected milk cans as the other does suspected houses. It gives the Parisian public full information on the composition of the food it consumes and the liquid it drinks, to warn it against any manufactured article which may be dangerous to health, to inspect regularly the markets and food-selling shops of the city for fraudulent and tainted goods, and if any are found to give the court the information necessary to punish the dealer, to make the analysis necessary to the police in pursuing its investigations, as in the case of the bomb in a front hall, to aid in the same way any institutions of the city, the hospitals, the prisons, the schools. Is the coffee muddy, the milk blue, the wine sour, the meat tough? Madame or monsieur appears forthwith at the desk in the office where samples are received to demand an explanation. The name of the article, the date of its receipt, the addresses of the depositor and that of the merchant said to have sold it are noted, and a receipt given the person, with directions when to return for the result. The kind of analysis desired is also entered; that is, if it is to be simply a judgment on the quality of the goods presented—the analysis usually asked for by the public, and for which there is no charge—or if a quantitative analysis is desired, that is, a report on the exact chemical constitution. The quantitative analysis is less frequent than the qualitative. Nevertheless, the former yielded a revenue not to be despised. In 1889 it amounted to 39,075 francs. As soon as the sample is properly numbered, registered, and ticketed, it is passed to the laboratory charged with the analysis of substance of that nature, where work is supposed to begin immediately upon it. None of the visited rooms was busier than that devoted to wine. In fact, in 1889, out of 18,117 analyses made, 6,450 were of wines. The proportions are only in keeping with the consumption of the city, which averages about 150,000,000 dollars a year. Expert tasters begin the work, and give their judgment on savour, colour, bouquet, and disease. The chemist then takes it, testing its colour with colorimeter, searching the bacteria with the microscope, gauging the alcohol with alcoholmeter or ebullioscope, determining the plaster of Paris, the sugar, the acidity, the tartar, all its fixed and volatile qualities, by the sure and delicate processes of the chemist. In the survey of the butcher shops a leading duty is to make sure that horse, ass, and mule meat are not masquerading as beef. Not that their sale is forbidden. On the contrary, the municipal laboratory itself has declared this sort of nourishment "an excellent thing." It simply demands that the meat be sold as equine and not bovine, and that the animals which furnish it are not decrepit or diseased. The first point is regulated by establishing shops especially for the sale of horse meat, or, if sold from a cart or in a regularly licensed butcher shop, requiring that it be marked plainly. Regulated by the municipality and watched by the Inspectors, the sale of horse meat has grown to enormous proportions since the first shop was established in the city, in 1866. Unquestionably the exigencies of the siege did much to reconcile the French palate and prejudice to hippophagy. The reconciliation was genuine, for it is estimated that it is eaten now in a third of the Parisian households. In 1891, 21,231 horses, 61 mules, and 275 asses were sold in the Paris shops. The meat costs about half what beef does. According to the laboratory, the quantity of fat is about the same, but the azotic matter is greater in horse meat than in beef. The daily duty of the Inspector takes him into even the public kitchens. Every dish which is used in a public restaurant of Paris, either in the kitchen or for the table, every pot, pan, and utensil in the bakeries and cheuculeue² every beer faucet in the wine

cellars, in short, everything used in preparing or serving food, is under the care of the inspector. The law forbids the use of lead, zinc, and galvanized iron in the manufacture of cooking vessels. It orders that all copper be tinned and kept in good condition. It directs that pottery which is covered with a glaze containing enough oxide of lead to yield to a feeble acid be seized. It orders that tin cans should never be soldered on the inside, and that the materials used in their manufacture be conformed to a certain standard. It is the Inspector's business to look after all these things. A woman was at the desk with a bit of cheap coloured candy, which one of the service was examining. "It is no doubt this stuff," he was saying, "which has made your baby sick." "There," said the guide, "is one of the reassuring parts of our service. That woman will receive to-day a lesson she will never forget. All her neighbours will hear it from her. Very often, too, we give them simple methods for detecting frauds. Thus they become their own inspectors."

A STIPENDIARY'S OPINION OF MARGARINE.

At the Wolverhampton Police-court, on January 5th, before Mr. Stipendiary Neville, William Lester, wholesale provision dealer, Darlaston, and Mr. Bagley, were summoned.

The facts given in evidence went to show that in October last Mr. Toy called at the defendant Bagley's shop and asked for half a pound of butter, with which he was supplied by Mrs. Bagley from a quantity exposed for sale on the counter, and on the sample sold being analysed it was found to be not butter, but margarine. Mr. Willcock stated that on inquiry they found that the mixture had been sold to Mrs. Bagley by the other defendant, Lester, and the explanation given by the latter was that it was owing to a mistake made by his assistant. The butter and margarine in his shop on the date in question had got mixed up together, and by mistake he had sent out, to Mrs. Bagley's order, 14lb. of what he supposed to be butter, but what was really margarine. He had expressed to Mr. Morris his great regret for what had occurred, and as there had never been any complaint made against Mr. Lester before, the prosecution under these circumstances did not press for a heavy penalty. They would also ask that the charge against Mrs. Bagley of selling the margarine as butter might be withdrawn, she having evidently acted quite innocently in the matter, on payment of costs.

After hearing the explanation, much to the same effect, from the defendant's solicitor, the Stipendiary said this was a very serious offence, and he sincerely hoped that the legislature of this country might be induced in the near future to pass an Act of Parliament to prevent such defences being set up. Here a dealer in a large way of business, by sending out large quantities of margarine as butter, to be sold by retail dealers, had not only committed an offence against the Act himself, but rendered the other dealers whom he served liable to very heavy penalties. In the case in question, supposing Mrs. Bagley had sold the whole 14lbs. of margarine with which he supplied her in half-pound quantities only, she would have been liable to penalties amounting altogether to £500. In fact, the whole concoction of margarine was a fraud from beginning to end. It was coloured so as to resemble the natural product butter, because if it were not so coloured people could not be deceived into purchasing it as butter. It helped the dishonest dealer who wished to cheat his customers, and it acted very prejudicially against the tradesman who wished to act honestly, but who was led into committing a fraud by the fraud committed upon himself by the wholesale dealers with whom he did business. He hoped that such cases as these would induce the Legislature of this country to follow the example set by certain places on the Continent, and pass a law to compel manufacturers of margarine to colour the article in such a way that it should not be mistaken for real butter. He certainly could not consent to pass a small penalty. It must be made clear to persons like the defendant dealing in margarine to exercise every possible care that the people to whom they sold this mixture were not imposed upon. The Stipendiary then ordered the defendant Lester to pay a penalty of £5, but he allowed the case against Bagley to be withdrawn on payment of costs.

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MALTED
MILK
 For Infants
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 CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
 NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
 OF ALL CHEMISTS AND STORES.
 SAMPLE FREE. 39, SNOW HILL, E.C.

IRISH BUTTER AND EXCESS WATER.

After reading carefully the evidence in the Manchester prosecutions, upon which at this juncture we must refrain from commenting, we are compelled to frankly say that a victory would be, so far as the Irish butter trade is concerned, a thousand times more disastrous than defeat. Irish butter-makers will find themselves mistaken if they imagine that grocers and the public will rest satisfied to continue to be victims of the excess water game, and the position those interested in the Irish trade have taken up in this matter is as suicidal and short-sighted as it is untenable. It is, however, a matter for Irish butter merchants themselves. If they choose to cut the throat of their trade by maintaining that Irish butters cannot be made without a higher percentage of water than 16, and with tongue in cheek, and "hocus pocus," strive to make the English grocer believe black to be white, believe, in fact, what everyone of the Irish butter merchants personally knows to be untrue, then we have to frankly face the situation that there is no hope for certain Irish butters in the English market. Reputable Irish makers will, as heretofore, send genuine butters made on scientific principles, and find, as they easily do, a ready market for their produce, but for the excess watered kinds no grocer will touch them, and we are bound to say he would be a fool if he did.

In contrast with the evidence as to water percentages, we ask our readers to note the following facts of analyses, not made for police-court purposes, from samples that for aught that can be known were specially selected, but for purposes solely and wholly of arriving at the truth, and the bulk of them long before this question of excess water cropped up. At a recent meeting of the Society of Public Analysts, Mr. H. Droop Richmond read the following paper upon "The Proximate Composition of Butter," from analyses made for years past in the laboratory of the Aylesbury Dairy Company.

At the end of 1890 Dr. Vieth read a paper before the Society, in which he gave in abstract the results of 267 analyses of butter, and described the method used for these (*Analyst*, xvi: 1). Since that time samples have been regularly examined by Dr. Vieth up to March, 1892, and since then by myself by the same method.

In view of the interest now attaching to the question of the amount of water in butter, I have thought it desirable to supplement Dr. Vieth's paper by giving the figures obtained up to the present date. I have nothing to add to his remarks on the methods of churning and preparing butter for the market, nor to the details of the method of analysis given in his paper.

In Table I are given the results of the whole of the water determinations made by Dr. Vieth and myself; this is a simple extension of that given by Dr. Vieth (*loc. cit.*), and is in the form adopted by him.

Percentage of Water.	Number of Samples.	Per cent.
7-8	2	·4
8-9	8	1·4
9-10	18	3·2
10-11	37	6·6
11-12	76	13·6
12-13	95	17·0
13-14	210	37·5
14-15	88	15·7
15-16	21	3·8
16-17	3	·5
17-18	2	·4
	560	100·1

A reference to the table given in Dr. Vieth's paper shows that although the number of samples is more than doubled, the percentages of water found in butter is practically unchanged, the third column (percentages of total samples) differing by only 1·5 per cent. as an extreme.

These 560 samples include various kinds of butter, among them being English, French, Danish, Swedish, German (Kiel), and Australian butters; many of them were churned at Bayswater, practically speaking, under the eyes of Dr. Vieth and myself, while the others were samples of butter on the market. As it is a well-known fact that butter loses water during the handling it receives in commerce, I have thought it desirable to divide these samples into two classes—English butters, which were analysed soon after churning; and foreign butters, which had stood a sea voyage and been otherwise handled.

TABLE II.—ENGLISH BUTTERS.

Percentage of Water.	Number of Samples.	Per cent.
7-8	2	1·4
8-9	5	3·5
9-10	13	9·1
10-11	17	11·9
11-12	36	25·2
12-13	33	23·1
13-14	23	16·1
14-15	9	6·3
15-16	4	2·8
16-17	1	·7
	143	100·1

Percentage of Water.	Number of Samples.	Per cent.
7-8	—	0
8-9	3	·7
9-10	5	1·2
10-11	20	4·8
11-12	40	9·6
12-13	62	14·9
13-14	187	44·9
14-15	79	18·9
15-16	17	4·1
16-17	2	·5
17-18	2	·5
	417	100·1

The history of the English butters is known, and they were made with a reasonable amount of care, as commercial butter; nothing is known of the origin of the foreign butters, and these may have included samples purposely mixed with water, or which, by carelessness in manufacture, contained an excess of buttermilk. Dr. Vieth has expressed the opinion that 16 per cent. of water should be considered as the maximum allowable in butter, and considering the above tables, I can only give my heartiest approval of this view. Out of the whole 560 samples, but five of them contained more than 16 per cent. of water. One of these, a Swedish butter, contained a great excess of curd, and had a cheesy taste, and was evidently, from this fact alone, a very carelessly-made butter; another sample, the only English one above 16 per cent. (contained 16·49 per cent.), was churned at a very high temperature, owing to the weather being very hot, and a supply of ice temporarily not obtainable. Of the other three samples, one was a Danish butter, and the other two Kiel butters.

In my opinion, the adoption of 16 per cent. as the highest permissible limit will inflict no hardship on honest traders, as it is quite high enough to include butters, in the churning of which slight errors of judgment or mistakes—to which even the best dairyman is liable—have been made, while the adoption of higher limits will but open the way to fraudulent addition of water.

MORE OF SOMERSET HOUSE AND VINEGAR.

At the South Shields Petty Sessions held last month, Daniel Sharpe, grocer, Hebburn, was charged on remand with selling adulterated vinegar. At the previous hearing of the case the certificate of the County Analyst stated that the vinegar only contained 60 per cent. of malt vinegar, and the other 40 per cent. was derived from other sources. Mr. Arthur Neal, of Sheffield, who appeared for the defendant and for the makers (Messrs. Hills and Underwood), then asked that the sample be submitted to the Analyst at Somerset House, and the case was adjourned for this purpose. At the adjourned trial Mr. Iliff, of Sunderland, appeared for the prosecution; Mr. A. Neal, of Sheffield, for the defendant and the makers of the vinegar (Messrs. Hills and Underwood); and Mr. D. E. Stamford, of Newcastle, appeared for Messrs. Johnson, Dodds and Co., merchants, of Newcastle. Mr. J. M. Moore read the certificate from Somerset House, which stated that it was pure commercial malt vinegar. Mr. Iliff said he could not accept the certificate of the Somerset House as being conclusive as to the facts in dispute in the case, and he asked for another adjournment so as to bring some one from Somerset House in support of the certificate. Mr. Neal said he very strongly opposed the application for an adjournment. If the County Council wished to fight a battle with Somerset House, let them do it without making his clients (Messrs. Hill and Underwood) pay all the costs, which had already amounted to about £50. Mr. C. W. M. Dale said the Bench had come there to hear Mr. Stock, the County Analyst. If Mr. Iliff had no further evidence, they should certainly dismiss the case. Mr. Stock went into the witness box, and said he was the Public Analyst. He received the sample of vinegar, which he analysed, and found that it only contained 60 per cent. of malt vinegar, and was of opinion that it was not a genuine sample of malt vinegar. In his opinion the certificate of the Somerset House authorities was not correct. The other 40 per cent. of the sample was vinegar, but not malt vinegar. He seriously differed from the Somerset House certificate.

Henry Doncaster was similarly charged, and Mr. Neal said in justice to the defendants (Messrs. Hill and Underwood), it ought to be stated that the vinegar which was sold by defendants was sold to them with a written certificate stating that it was pure malt vinegar. The vinegar had been sold for the past 150 years, and Mr. Stock was the first Public Analyst to discover that it was not the correct article. It had stood the test at Somerset House, and he contended that the case should fail.—Mr. Francis Sutton, County Analyst for Norfolk, said that in his opinion the sample was that of pure malt vinegar. It was not possible to make vinegar of a purer nature. The Bench, after retiring, determined to dismiss both cases, with costs, refusing to give another adjournment. They fixed the costs at 14 guineas.

Elizabeth Faulker, of 1, Spring-cottages, Belmont-road, was summoned at West London for selling a quantity of butter which contained 75 per cent. of foreign fat. Mr. Curtis Bennett said it was a bad case, and fined her 40s. and 12s. 6d. costs. In a second summons, for selling margarine contrary to section 6 of the Margarine Act, the defendant was fined 10s. and 12s. 6d. costs.

Charles Edwards, of 196, High-road, Cbiswick, was fined 40s. and 12s. 6d. costs for exposing for sale margarine, the same not having attached thereto a label bearing the word "margarine." Inspector Clarke proved the case. The defendant pleaded guilty.

LADY HENRY SOMERSET AND THE MATTEI QUACK SWINDLES.

A specimen of Lady Henry Somerset's journal, "*Woman's Signal*," has been sent us, and whilst we have a strong sympathy with many of the objects Lady Henry Somerset has in view, we regret to be compelled to say that the copy before us possesses the very worst of the features of the existing religious and temperance papers, minus some of their virtues. It is a curious fact that religious and temperance journals have ever been foremost in the support and advocacy of quack swindles, often of the most shameless and indecent nature. Lady Henry Somerset's journal apparently follows in the footsteps of those religious papers that published fulsome recommendations from clergymen of the Dr. Joseph Parker type, upon quack nostrums such as Alabone's cure for consumption. There is unfortunately a large portion of humanity who yet believe even what exposed charlatans like W. T. Stead says, and there are hosts of clergymen who do not mind what laudatory testimonials they bestow on quack swindles. We had hoped to see a higher tone in Lady Henry Somerset's journal, but we were mistaken. The following is typical of the uses to which the woman's emancipation journal is being degraded, Count Mattei's swindles occupying a quarter of one page of the *Woman's Signal* :—

COUNT MATTEI'S REMEDIES ARE THE BEST Family Medicines.

Pamphlet, containing List of Diseases for which each Remedy may be used, FREE from The Manager, 18, Pall Mall East, London, S.W.

Lady Henry Somerset must not be surprised if self-respecting persons, disgusted with these frauds, leave severely alone journals which support them.

CO-OPERATION AND FRAUD.

DISCLOSURES AT SKIPTON.

Our readers will remember the impertinent attempt of the Co-operative Union, Limited, towards the end of December, to intimidate us into silence as to the character and extent of the adulteration practised for too long a period with impunity by Co-operative Societies. Thanks, however, to our exposures, Co-operative stores are at last being brought to justice. How much it has been needed, the following facts shall testify. Considering the revelations as to the methods by which the co-operators sought to hoodwink the Bench, we cannot do otherwise than consider the fine shamefully inadequate. Such an offence surely deserved the full penalty.

At Skipton Police-court, on Jan. 6th, the Earby Co-operative Society was summoned in the person of its manager, George Hartley, on two informations, sworn to by Mr. A. Randerson, County Council Inspector under the Food and Drugs Act, for (1) selling margarine as butter and (2) not labelling it as such. The defendant society was represented by Mr. F. W. Steele, of Burnley. The Inspector's evidence was to the effect that on November 25th he visited Earby for the purpose of carrying out the duties of his office. He called at the Co-operative Society's stores, and there saw some butter exposed for sale. Witness purchased 1lb., for which he paid 1s. 4d., which was the retail price in Earby that day. Witness informed the manager of the purpose for which the butter was required, and then went through the usual formalities of dividing the sample into three parts. Witness asked defendant if he had a warranty with the butter, to which the defendant replied in the negative. On December 20th he received a certificate from the West Riding Analyst saying that the sample consisted of 40 parts of butter and 60 parts of margarine. Joseph Smith, assistant to Mr. Randerson, having given corroborative evidence, this closed the case for the prosecution. The defence set up by Mr. Steele was (1) that the butter was purchased as pure butter by the Society and a written warranty was given, (2) that when it was sold to the prosecutor the manager had no reason to believe that it was not pure butter, and (3)

that it was sold in the same state as when purchased by the defendant society. Mr. Steele further put in the invoices having reference to the particular sample of butter in question, and pointed out, for the information of the Bench, that on the foot of each invoice, written in ink, were the words "Guaranteed Pure." He quoted a recent decision in the Queen's Bench Division, to the effect that such words as "Guaranteed Pure" on an invoice constituted in themselves a sufficient warranty. That being so, he held that the Magistrates could not convict in that case. The invoices were handed up for the inspection of the Bench, and Mr. Steele proceeded to call evidence for the defence. George P. Hartley, manager for the Society, said that he had acted in that capacity for five years, and during that time he never adulterated any margarine, and, to the best of his recollection, never retailed any. They sold nothing but fresh butter until about twelve months ago, when they were unable to get a supply. At that time there was a demand for Kiel butter, and they had since sold both Kiel and farmers' butter. When he purchased the butter in question, he purchased it as "pure Kiel butter." Corroborative evidence was given by Walter Wilkinson, shop assistant. The Bench held a consultation, after which the Chairman remarked—It is an absolute fact that time after time people come here for selling adulterated goods, and they plead that they did not know they were adulterated. All I can say is that if they don't know it, it is their duty and their business to know it. The defendant Society will be fined 40s. and costs. The costs amounted to £1 6s. 10d. Mr. Steele pressed the Magistrates to state their reasons for the conviction, so that an appeal might be lodged if thought advisable. The Chairman: We convict in this case because, without any doubt whatever, the invoices are not correct, and they have been tampered with for the purposes of the case. The second information against the Society was, with the consent of the Bench, withdrawn.

We particularly commend this object lesson in co-operation to Mr. Arnold Forster, M.P., to Mr. Acland, M.P., and to Mr. George Jacob Holyoake. Retailers in Skipton district, who have for so long been handicapped so unduly by co-operative mendacity and chicanery, are fortunate that so fearless a public official as Mr. Randerson is entrusted with the enforcement of the Food and Drugs Acts in their district. We hope officials in other districts will look sharply after the "stores."

SOMERSET HOUSE AND LARD ANALYSIS.

Recent Somerset House certificates have surprised no one more than the manufacturers themselves, who were perfectly cognisant of the adulteration, but grateful nevertheless to the Somerset House *ignorami* who have declared their adulterated goods genuine. The following experience of Mr. Keating Stock, Public Analyst to the Durham C.C., does not therefore surprise us. In one case in which the Somerset House referees declared the lard genuine, Mr. Stock sent the ether washed deposit to Mr. Alfred H. Allen, Mr. Otto H. Hner, Dr. Alfred Hill, and Mr. E. W. T. Jones, all of whom found beef stearine in the sample. "But Mr. R. Bannister he, says beef stearine couldn't be." It is a pretty prospect for the Fertilisers and Feeding Stuffs Bill, should Mr. Bannister get the post of Chief Analyst.

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Witness further said there was no foundation for the statement that of late years the percentage of water in Irish butter had been fraudulently raised; on the contrary, it had improved recently. In October last year, accompanied by Mr. Stokes, a Limerick magistrate, witness went to the dairy of Mr. M'Ellicott, County Kerry, which was fitted up in a manner much superior to surrounding dairies. A sample of the best cream was churned, and after churning the butter was found on analysis to contain 20.8 per cent. of water. The butter was next washed and run through rollers six times, after which another sample was taken from it, and found, on analysis, to contain 19.64 per cent. of water. A sample was also taken after 4 per cent. of dry salt had been added, and after the butter had been run through the rollers again. This sample was found to contain 20.24 per cent. of water. Everything was done in that experiment to get all the water out that was possible. He would swear no water was added. The best appliances were used. In November last he was present at an experiment which was conducted at the factory of Mr. Gibson, Limerick, who bought butter in a state of manufacture, and worked it up, and who also blended butter. When the temperature was high it was most difficult to get the water out of butter. For the purpose of the experiment the temperature of the cream used was raised to 70 degrees. The butter sold by the defendant was made in August, when the weather was hot. After being taken from the churn the butter showed 29.36 per cent. of water. All the moisture that could be taken out of it was then removed, and the percentage of water it was still found to contain was 27.92. It was next washed with water, the temperature of which was 50 deg., and dry salt added. The butter then showed 17.40 per cent. of water. A sample from the same churning was washed with brine, which process raised the quantity of water in the butter to 20.80 per cent. If butter was to be kept it must be washed in brine, and the ordinary Irish farmer had not access in hot weather to water at 50 degrees temperature, which was used in this case for washing before the brine was employed. The result of these experiments was to show that Irish butter fairly made might contain 20.40 per cent. of water when made in cold weather. It was impossible to tell the exact amount of water in butter. Witness next quoted from entries he made in his diary last summer. Under date June 24th, when the weather was hot, he wrote "The butter brought to market was very soft and waterish in appearance." In August he wrote "The butter shows high-degrees of water. The weather is so warm that the makers cannot handle it properly."

Cross-examined: He wrote the above entries on judging from appearances. He could not tell the amount of water in butter.

Then what do you mean by these notes?—I cannot tell.

Further cross-examined, he said he was aware that the Analysts in Ireland had fixed 15 per cent. as the allowable amount of water in butter. It was true that convictions had been obtained in Ireland in respect of butter containing 19, 20, 21, and 22 per cent. His association had not recently instituted prosecutions against farmers for an excess of water. It was true that as Secretary of it he had issued a circular in which it was said that as sellers of butter were being almost daily prosecuted for an excess of water in butter, and as the members of the Association believed such excess to be worked in with fraudulent intent they gave notice that they would prosecute in all future cases where they found such excess to be present in butter bought by them. He explained that the circular was issued at a time when the Analyst's standard was believed to be a correct one. He was aware that Sir Charles Cameron certified that there was adulteration where there was 16 per cent. The first percentage in the M'Ellicott experiment was obtained after the buttermilk had been allowed to drain off. He explained the increase in the percentage of water in that experiment after salt had been added by saying that there was salt in water. He did not know that warm brine was used by farmers because it enabled them to get a greater percentage of water in their butter. It was used because by that means the salt was more evenly spread throughout the butter. There had not been any experiments to prove that the use of warm brine had that effect. He did not know whether there was any place except Ireland where warm brine was used.

Re-examined: After the experiments he said the standard of 15 per cent. could not be maintained.

By the Court: He could not fix a standard. A higher standard would be required for August than for April.

Robert Gibson, butter merchant, Limerick, said of late years the quantity of water in Irish butter had "absolutely and unmitigatedly fallen." County Clare had been noted for fraudulently-made butter, but recently the quality in that county had improved by leaps and bounds. Mere washing with hot brine did not increase the moisture. Hot brine was necessary to get the salt thoroughly incorporated with the butter. The use of warm brine was not necessarily a sign of fraud. In such hot weather as prevailed in August and September it was impossible to get the water out of butter, however much it was worked. He confirmed Mr. Hickey's account of the experiment at his factory. It was easy to tell when water was added, but such was the variability of the article that there might be honest butter containing 40 per cent. of water and adulterated butter containing 15. He himself had prosecuted in cases where the butter contained 22 per cent.

Cross-examined he said he could tell by looking at butter when water had been fraudulently added. He could also tell by the grain.

Mr. Sutton: I have never heard of grain in butter before. (Laughter.)

Witness: Everyone in the trade has. In further reply he said he

was the agent in Limerick of a well-known Manchester firm, but never troubled himself about the quantity of water in the butter he sent over until a prosecution in Manchester sometime ago; since then he had sent butter containing not more than 16 per cent. but of 20,000 firkins he saw last year, he did not think he came across more than 10 which were adulterated. Butter could be adulterated in two ways, either by churning at a high temperature and working in hot brine while it was warm, or by heating the brine to a high temperature after the butter had been properly made and then working it vigorously in. Butter so manipulated was hard and sticky, and had not the keeping appearance of the genuine article. The trick he had described was done in districts where farmers were poor. They sent their six, seven, or more pounds each to the one who had the name of the best butter-maker amongst them, and then if he found that the collection did not fill a firkin, shoved a lot of hot pickle in. (Laughter.) It was possible to reduce the amount of water in Irish butter to 9 per cent., but consumers would not like it, and small farmers had not the appliances for extracting so much water as he had.

Mr. W. L. Stokes, Justice of the Peace, and Agent in Limerick for the Co-operative Wholesale Society, Manchester, also gave evidence, in the course of which he spoke of the absence of adulteration in Irish butter, and declared that the standard set up by the Analysts was unreasonable.

Captain Sands, J.P., of Tarbert, county Kerry, said he owned a large establishment, at which the milk he bought from the surrounding farmers was made into butter. The weather was so hot last August that he was completely floored for a short time. After doing his best with some of his butter that month he sent it to Mr. Gibson, who reported it to be full of water. He should have expected to hear that butter made that month without the appliances he had would have contained a great deal more water than 21 per cent. The charge against the Irish farmers of adulterating their butter was unfounded.

Cross-examined: Prior to August and since he had found no difficulty in getting the excess of water out of the butter.

Mr. M'Ellicott, J.P., a large farmer in county Kerry, gave evidence with respect to the experiment at his farm which previous witnesses had referred to. In cross-examination he caused some amusement by stating that he himself had fined farmers for having 18 per cent. of water in their butter when his butter contained 20. He did not know it at the time, though. He should not fine any more for having 18 per cent. Asked with reference to Sir Charles Cameron's standard, he said he did not think much of professors; they were not practical men.

The further hearing of the case for the defence was then adjourned until Monday.

On Monday, Professor Charles Tiebhorne, Dublin, said he had had a long and thorough acquaintance with the subject of Irish butter. That article was specially prepared for keeping, for which purpose brine was used, but not necessarily hot brine, though hot brine might be used without fraudulent intent. He had seen a document containing the result of experiments made during the last three years by the Danish Government with reference to water in Danish butter. The samples analysed averaged 15 per cent. The highest percentage in any sample was 19.99. With an average of 15 per cent. in Danish butter he did not think it fair to make that percentage a standard for Irish butter. He did not think it fair to put up any average as a standard of limit. Whatever standard was set up it ought not to apply to butter made in hot weather, as was the case with the butter in respect of which M'Comus was summoned. The higher the temperature was, the more difficult it was to get out the water. It was difficult for an expert to say what amount of water was in any sample of butter without analysis. On Friday he purchased in Dublin some pure Danish butter, and after separating the butter fat he added to the fat 25 per cent. of water. That sample he produced in court, and he said it did not show the water. He had analysed 200 samples of Irish butter sent to him by the South of Ireland Butter Merchants' Association. In respect of 152 of those samples the results were as follows:—15 samples contained from 11 to 13 per cent. of water, 12 from 13 to 15 per cent., 35 from 15 to 17, 27 from 17 to 19, 29 from 19 to 21, 11 from 21 to 23, 7 from 23 to 25, 7 from 25 to 27, 2 from 27 to 29, and 3 contained from 29 to 31 per cent. Only 31 of the 152 samples contained less than 15 per cent. of water. To fix the standard at 15 per cent. would mean shutting out 80 per cent. of Irish butters, as at present made, from the English market. From the ingredients in Irish butter he had no doubt it had been found from experience that brine was the best medium of preserving it.

Cross-examined: When he made the experiment with Danish butter the water he added was 4 degrees warmer than the butter. If he had used warm brine he did not think the butter would have held a still greater quantity of water. By the use of brine, butter could be made to hold more water than if dry salt, or a little quantity of brine, was used. He had no acquaintance with English salt butter, nor was he aware that Continental makers did not find it necessary to use brine. He was aware that the question of water in Irish butter had been discussed recently by scientific men in Ireland. Professor Carroll might have said at the Munster Dairy School that it ought to go forth from that School that they did not agree with the suggestion which had recently been put forward that a large proportion of water should be allowed in Irish butter. He was also aware that Sir Charles Cameron fixed the standard at 15 per cent., but he did not agree with him. Witness was next questioned with reference to his analysis of the samples submitted to him, and admitted that the amount of water found in them bore no relation

to the amount of salt in them. Having no knowledge of the origin of the samples, he could not explain this. The samples included some which were taken in August, and which showed only from 14 to 16 per cent. of water. In making his reports upon samples sent to him as a Public Analyst, he should be guided very much by the butter. He had come to the conclusion that the allowable amount of water in butter was a debatable question. The standard ought to be fixed by the Legislature. That had been done in about five cases. He was not prepared to give a generous limit, but to tie Irish butter down to the standard of Danish and English butter would be very unfair, and a national calamity. He had certified for prosecution in a case where the amount of water was 22 per cent. Most of the prosecutions in his experience had been in margarine cases. He had never certified for prosecution when the amount of water was 17 per cent. In the 22 per cent. case he did not mention the degrees of excess; that certificate was given more on the general character of the butter. He would fix the standard of water in fresh butter at 16 per cent. and at 20 per cent. in Irish butter. Mr. William Harrington, Fellow of the Chemical Society, Public Analyst for County Cork, and Analyst to the Cork Butter Market, said he had analysed the sample of butter which was bought from M'Comus's shop. He found it to contain 19½ per cent. of water, not 21½ per cent., as Mr. Estcourt had certified. He certified for 19½ after making three analyses of the sample. It would be very difficult to get the water out of butter during a hot month like August, and it was quite possible that butter might honestly contain 21½ per cent. of water after the farmer had done his best to get the water out. With the knowledge he had now he would not prosecute a man for selling butter containing that percentage of water. He did not think there were any prosecutions by the trustees of the Cork Market last August, the weather being exceptional. That course he considered a proper one to take.

Cross-examined: He said there was no loose water in the bottle containing the sample he analysed. If there was any in the sample Mr. Estcourt analysed that might account for the difference between his analysis and Mr. Estcourt's. It was more likely to be due to variation in the butter. He did not suggest that Mr. Estcourt had made a mistake. He had reported to the trustees of the Cork Market that any butter containing over 19 per cent. contained an excess. Those trustees were under the impression that Somerset House had fixed 19 per cent. as the standard, and so was witness until quite recently, and, therefore, they felt they had no option but to prosecute in all cases where the percentage was over 20. He would be surprised to hear that Somerset House had fixed the standard at 18. Hitherto he had believed that butter containing 20 per cent. of water was adulterated, but he had now moderated his views on that point.

By the Court: Butter might be adulterated either by leaving water in or by adding it.

Re-examined: He said he would not say butter was adulterated when the maker had done his best to get the water out. It was not safe to say from his analysis that there was more than 19½ per cent. of water in the M'Comus butter.

Professor O'Mahoney, Fellow of the Chemical Society, Assistant Professor of Chemistry at Queen's College, Cork, and Analyst of the City of Cork, said, in ordinary circumstances he considered from 19 to 20 per cent. of water in Irish butter a reasonable limit. He had frequently passed butters containing 19 per cent. His experience was that in hot weather the amount of water in the article differed to the extent of 4 per cent. from the butters made in the cold months. That was in butter coming from the best Irish dairies. It was possible for a butter to honestly contain 21½ per cent., even when made with the best appliances. It was difficult to fix a fair allowance of water in Irish butter. In his opinion the data was very insufficient.

Cross-examined: He did not agree with the statement of Mr. Thomas Forrest, Superintendent of the Cork Butter Market, that where butter contained more than 16 or 17 per cent., water had been fraudulently added, for the reason that he had not seen the data on which that assertion was based.

Re-examined: He said 18 per cent. of water was too low a standard.

By the Court: Under certain conditions the amount of water could not be reduced to 16 or 17 per cent., even if made with the best appliances, because of the weather and the scarcity of cold water. Last year more Irish butter was sent for analysis than there was in the two preceding years put together. Was that on account of the weather or through the discussion of the question of water in butter? It was really only last year that Food and Drug Inspectors were appointed to get cases outside the cities.

Mr. William Henry Stott, buyer in Cork for the Co-operative Wholesale Society in Manchester, said he bought from 30,000 to 50,000 firkins of Irish butter in a year. It would have a fatal effect

on the Irish butter trade if a standard of 15 per cent. of water was fixed for Irish butter. It was impossible to tell at a glance how much water the article contained.

Cross-examined: The sellers would not give him a warranty. If he could not tell the amount of water the grocer's customers could not. Butter might contain thirty per cent. of water and still pass. It was no part of his society's desire to sell butter containing an excess of water.

Mr. Robert Jagger (James Cooper and Co., Oldham) and Mr. W. Hayhurst, Blackburn, two grocers, said Irish butter as now sold was not to the prejudice of the purchaser. A great many of the operatives of Lancashire, said Mr. Jagger, preferred Irish butter because it had more grip on the palate than mild Danish butter had. The purchaser was not prejudiced because, although he got more water in his butter, he got it from 2d. to 3d. per pound cheaper. He could not tell when Irish butter had fifteen per cent. of water in and when it had twenty-two. If Irish butter were shut out of the market by the standard of water being declared at fifteen per cent., a large number of working people would be punished by having to pay a larger price for an article which they did not prefer to Irish butter.

In cross-examination, Mr. Jagger said that he could not tell if there was thirty per cent of water in Irish butter. Accordingly a poor customer could not tell, but he did not think such a customer would be prejudiced by buying what was one-third water because it was the quality which regulated the prices at which the butters were sold. Working people knew when they were buying Irish and when they were buying Danish, although there might be no ticket on the former. The British public were shrewd buyers.

Mr. Matthew Hudson, wholesale butter merchant, of Manchester, who said he had had 42 years' experience of the trade, also said it was impossible for a dealer to tell the amount of water in butter. In August he gave express instructions to his agent in Tipperary about the water in butter sent to him, but such were the exceptional conditions under which the butter was produced that month, that he received a number of faulty firkins. He was of opinion that if no more than 15 per cent. of water was allowed in Irish butter, it would ruin the butter.

Mr. Bradbury announced that the evidence of the last witness closed the case for the defence, and he asked that the decision of the Stipendiary should be given on the evidence he had heard.

Mr. Headlam expressed himself in favour of hearing the remaining cases first.

Mr. Bradbury said he understood there were experts to be called for the prosecution in the other cases. If Mr. Headlam heard that evidence, there was the question whether, in giving his decision in the M'Comus case, he could exclude it from his mind.

Mr. Headlam said it was quite possible that he could.

Mr. Sutton said he only proposed to put another case before the Court, after which he would ask for the decision of the Stipendiary.

It was then arranged that the next case should be taken on the 18th inst.

SUPPRESSING ADULTERATIONS AT CHISWICK.

At the West London Police Court on Friday, Elizabeth Fowler, of 30, Devonshire-road, Chiswick, appeared to answer a summons issued by Mr. John H. Clarke, an officer, under the Adulteration Acts, for the district of Chiswick, for selling, to the prejudice of the purchaser, a quantity of butter which contained 50 per cent. of foreign fat, and was not of the nature, substance, and quality demanded. Mr. R. F. Finnis appeared on behalf of the Local Board in support of the summons. Inspector Clarke stated that he visited the defendant's shop on the 15th December, and purchased half-a-pound of butter, for which he paid eightpence. After the purchase he informed her that the butter was purchased with the intention of having the same analysed by the Public Analyst, and offered to divide it into three parts, but she declined to have it divided. At her request he signed the invoice which she produced in Court, but Mr. Curtis Bennett said it did not constitute a warranty, and he also observed that a mixture had been sent with pure butter. In reply to the Magistrate the Inspector said that the defendant had only occupied the shop a short time and that this was the first offence. Mr. Curtis Bennett said that he should deal leniently with her now, but if she came before him again for a similar offence she would be heavily fined. She would now have to pay a fine of 20s. and 12s. 6d. costs. A second summons was then gone into, under the Margarine Act, for selling margarine, the same being delivered to the purchaser in a plain paper wrapper. The Inspector having produced the original wrapper, the defendant was fined 5s. and 2s. costs.

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DISEASED MEAT: IMPORTANT APPEAL.

BLAKER V. TILLSTONE.

This case, from Brighton, came on for hearing on January 12th., raised a question of some general interest and importance, whether, under the provisions of the Public Health Act, 1875, a person can be convicted of having diseased meat upon his premises for the purpose of sale, without direct proof of his actual personal knowledge that the meat was bad or diseased. The 116th section of the Act gives the Magistrates power, on proof that meat intended for sale as human food is diseased, to direct it to be destroyed; and then section 117 says, "And the person to whom the same belonged, at the time of exposure for sale, or on whose premises it is found, shall be liable to a certain penalty, or, in the discretion of the Magistrate, to imprisonment." The question was now raised (which it was stated by counsel had never yet been decided) whether it is necessary, in order to convict the party of the offence, that it should be proved and found that the party knew of the unsoundness of the meat. In the present case it appeared that two of the servants of the defendant, a sausage maker, bought the meat of a butcher (2s. 3d. a stone being the price), and next day it was in course of conversion into sausages when it was seized. The Magistrates found that the meat was bad and that the defendant's servants "must have known that it was so," and that the defendant might and would have known it if he had used reasonable care. But they did not find as a fact that he did know, and though they convicted him they stated a case in which the question reserved was whether, in the absence of direct proof that the defendant had actual personal knowledge of the unsoundness of the meat, they ought to have convicted the accused.

The Court came to the conclusion that the conviction was right and must be upheld.

Lord Coleridge, in giving judgment, said that no doubt in "The Queen v. Sleep" and other cases, as, for instance, under the statute as to persons having in their possession Admiralty stores, expressions had been used by Judges showing that they thought evidence of a guilty knowledge was necessary. But the Court had now to deal with a different statute, on which it had been held that the Magistrate might, on proof that the meat was unsound, order it to be destroyed without any summons or notice to the owner. Then the Act went on to provide that in such a case the person in whose possession the meat is found may be convicted of the offence charged. The object of the Act was that people should not be exposed to the danger of eating bad meat, by which they might be poisoned. It was not disputed that the meat here was found to be bad. The question was whether it was necessary that there should be direct proof that the defendant had personal knowledge that the meat was bad. If it were so, then a man might think that it was not his duty to inquire, and might go on in the habit and practice of selling unsound meat without the possibility of his being convicted. It surely, when the words of the Act did not require such a construction, would not be reasonable that the Court should adopt a construction which would quite defeat the Act. The question reserved by the Magistrates was whether their conviction was wrong because there was not direct proof of actual personal knowledge. He thought it was not, and that therefore the conviction must stand.

Mr. Justice Day said he entirely concurred with the Lord Chief Justice in the conclusion to which he had come and the reasons he had given.

Conviction accordingly upheld.

THE SPENT GINGER FRAUD.

The news that the Sheffield authorities are prosecuting retailers for selling as ground ginger substances containing "spent" ginger gives point to our warnings to grocers to beware of the firms who practice this swindle. Our readers will remember we pointed out some months ago the *modus operandi* of this fraud. Unscrupulous dealers buy from ginger-beer manufacturers the spent ginger from which almost all the strength has been extracted. This rubbish, mere cellulose fibre and starchy matter, is ground up with some genuine ginger, and the whole sold to grocers and the public as genuine.

There are firms of supposed high standing who actually quote ground ginger at 20s. to 30s. per cwt. less than *root* ginger, although the grinding itself costs from 2d. to 2½d. per pound, and ground ginger, if genuine, ought to be accordingly higher in price. Grocers who buy ground ginger from such firms, not only lay themselves open, but they actually invite prosecutions, as they can be sure that such ground gingers cannot possibly be genuine. The Norfolk County Analyst, Mr. Sutton, reports that he recently analysed a sample of this class of spurious ginger which only contained half its bulk genuine ginger.

THE PURE MILK MOVEMENT IN SCOTLAND.

The Glasgow Dairy Company, Limited, started sixteen years ago, the farmers who supply them with milk having weekly to give certificates that the cows are in good condition, that the family and servants are healthy, and that the steadings are satisfactory to the sanitary authorities. Similar precautions are taken in the branches of the company, so that there is a certainty that the milk sold is pure. The late Dr. Fergus, the present chairman (Mr. John G. Sandeman), Professor McCall, and Dr. Russell, officer of health, were amongst the principal promoters of the undertaking, and though there was a loss the first year or two, the shareholders have for a long time been receiving a dividend, no doubt largely due to the energy and commercial sagacity of Mr. Alexander Leitch, who has been secretary and

manager since 1879. Mr. W. V. Jackson has been appointed assistant manager, and as he is a man of capacity like his chief, the business should get an impetus. The principal work of the dairy is done in West Cumberland-street. The place has been designed by Mr. Leitch, aided by suggestions made by Mr. Mander Allender, of the Aylesbury Dairy Company—a gentleman who was robbed and murdered at Monte Carlo last week. The milk is brought from the country and first lodged in a large apartment, and then prepared for distribution. Here, too, powdered and fresh butter is made up without being touched by hand. In an adjoining hall are two steam churns—the one for making butter from cream and the other from uncreamed milk! Boxes containing 70 pounds of butter, and with a refrigerator in the centre, are heaped up, ready to be despatched to the Mediterranean, or any place with the certainty that the butter will arrive in as good condition as on the day it was made. In this same hall are all appliances for thoroughly cleaning the tin cans in which the milk is conveyed, and before any one is used again the interior is steamed, and whatever may be deleterious removed. In the courtyard are all the vans of the company, and on one side is a six-stalled stable, and on another a bakery, where all the bread used in the branches is made. In West Cumberland-street is a dairy shop, and in Woodlands-road another—both examples of cleanliness and comfort. The new shop at 237. Sauchiehall-street has been altered into its present form at an expense of a thousand pounds, from designs prepared by Mr. Leitch. It goes back a great distance, and is furnished with little tables upon which customers enjoy what they order: There is a room for ladies. Cleanliness and ventilation prevail.

ADULTERATED DRUG PROSECUTION.

On January 9th, at the Settle Police-court, Thomas Altham, and Thomas Dawson, grocers, both of Settle, was summoned by Mr. A. Randerson, West Riding County Council, Inspector of Food and Drugs, for selling 3 ounces each of tincture of rhubarb, which was destitute of saffron. Mr. G. R. Charlesworth, appeared for Dawson, who was fined 1s., and £1 10s. 4d. costs, and Altham was fined 1s., and £1 9s. 3d. costs.

THE CHURCH AND SANITATION.

It is a sign of the times when the Church of England begins to extend its parental care to the sanitary conditions under which men live. This it is now doing by means of the Church Sanitary Association, of which institution the Earl of Winchelsea, Bishop Mitchenson, and the Dean of Winchester have just become vice-presidents. The Dean of Winchester in a letter says: "I am fully convinced that our Church can do an excellent work by taking the lead in sanitary subjects, which are as uncontentious as they are important." We agree with the rev. gentleman that the Church could undoubtedly with its splendid organisation throughout the country prove itself a power in matters such as these, and we hope to find its influence exerted more and more in such direction.

IS DANISH BUTTER ADULTERATED.

At a meeting of the Lowestoft County Council, on January 10th, it was stated, with regard to adulterated Danish butter, they could not lay hold of the consignee, as the butter when received here was labelled "pure." As the consignor lived abroad he could not be legally successfully proceeded against. It was a serious thing that the public should be taken in in this way, and could not get redress.

ANSWERS TO CORRESPONDENCE.

FOOD AND DRUGS INSPECTOR'S QUERIES.

R.I.C. Sergeant.—The bottle having burst, a prosecution would be bound to fail.

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LONDON, 1893 (this Year).

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or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labor.

Why support the product of a country which brags of McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDENS' FACTORIES, LIVERPOOL.**Food and Sanitation.**

SATURDAY, JANUARY 27, 1894.

THE SOMERSET HOUSE SCANDAL.

WERE it not that so many grave interests are at stake, and that English barley-growing, dairy-farming, hop-growing, lard refining and other industries demand the extirpation of the existing wretched, ignorant, and utterly untrustworthy system of food analysis at Somerset House, we would feel disposed to pity the poor, bungling department struggling to perform work for which it has not got the skill or knowledge, and when challenged to prove its competence driven to the most pitiable shifts to avoid exposure. Any further proofs of the scientific incapacity of Somerset House chemists at our hands we feel would be somewhat cruel, being too much akin to the throwing of water upon a drowned rat, for the truth is, that scientifically the Somerset House chemists are dead, and there exists no shadow of an excuse for their remaining unburied. They themselves, however, seem pachydermatous as to the scientific disrepute into which they have fallen. Nay, they even presume to still pose as capable analysts, although it is true when they are put to the proof they shirk the ordeal, placing between themselves and a test of their accuracy the sacred shield of red tape. The Durham County Council has just had a curious experience of this. Their Public Analyst, Mr. W. F. Keating Stock, analysed a sample of lard and found it to contain 5 per cent. of beef fat. The sample was referred to the Somerset House referees who analysed it and declared that it neither contained beef stearine nor beef fat. As Mr. Stock had positive proof that the sample did contain beef fat, and as his analysis was corroborated by analyses made by four of the ablest experts in lard analysis, he addressed the following letter to the Durham County Council, whose clerk, Mr. Simey sent it to Somerset House.

County Analyst's Office, Darlington,
 September 7th, 1893.

DEAR SIR,—In reply to your letter of the 5th instant, I beg to hand you details of the process by which I analysed the sample of lard in question. In addition to this I think I should state the reasons I have for saying that the sample does contain beef fat. It is a well-known fact that beef fat has a higher melting point than lard. It is also a well-known fact that the addition of beef fat raises the melting point of lard. Now I have found by experiment that the stearine of beef fat is less soluble in ether at a certain temperature than is the stearine of lard. Thus a pure lard melting at thirty-nine degrees centigrade gives only one third of the matter insoluble in a given bulk of ether at a given temperature which is yielded by a lard having the same melting point exactly, but containing 5 per cent. of beef fat. Applying these facts to the analysis of the sample now in question, I found that it melted at 37.6 deg. Centigrade and gave an ether deposit

of 36 milligrams for 3 cubic centimetres of the melted sample. Whereas a pure lard melting at 39 deg. Centigrade gave only 12 milligrams of ether washed deposit under exactly similar conditions. I have been working at this matter for several months, and have made hundreds of experiments, and I say that no pure lard melting at 37.6 degrees will give 36 milligrams of deposit by my process of analysis. I made three separate analyses of the sample, and got the same results in each case. I examined the deposit from ether, and found the characteristic plumose crystals of beef stearine. I compared the samples analytically with standard mixtures containing 5 per cent. of beef fat, and all the evidence confirmed my opinion that beef fat was present to the extent of at least 5 per cent. in the sample.

I can readily understand a doubt arising in the mind of an Analyst who had not had a large amount of practice in lard analysis as to so small an admixture as 5 per cent. of beef fat. But in my own mind no such doubt exists. It would, however, be of very great service in this case if the Chemical Officers at Somerset House would re-consider their opinion in the light I have now thrown upon it, and if they would be good enough to say which of the two tubes sent herewith contains beef stearine.

R. Simey, Esq.

Yours faithfully,
W. F. KEATING STOCK.

The Somerset House chemists did not say which tube contained beef-stearine, because they couldn't; but they sent the following reply:—

Inland Revenue,
Somerset House, London,
2nd October, 1893.

SIR,—The Board of Inland Revenue having had under inquiry your letter of the 8th ultimo, I am directed to acquaint you, in reply, that they find that the method referred to in the copy of Mr. Stock's letter was carefully applied in the analysis of the sample of lard sent here by the direction of the Magistrates, and that due weight was given to the results obtained before coming to the conclusions stated in the certificate given at the laboratory here on the 11th August.

Fresh experiments have been carried out, using, as before, for the purposes of comparison, samples of genuine lard prepared in the Board's laboratory from the fat of the hog, with the result that no grounds can be found for sustaining the opinion that the sample of lard contains beef fat.

The contents of the two tubes referred to have not been submitted to analysis, as hitherto it has been made a rule not to undertake the analysis of any samples connected with a prosecution under the sale of Food and Drugs Act, excepting those duly referred here by the Magistrates, and the Board consider that it would be inexpedient to depart from that course in the present instance.

The allusion to the terms of the laboratory certificate is slightly misleading. The word "method" is not used, the actual words being "the results of the analysis," and this phrase is inclusive of all methods likely to throw light on the composition of the lard.

Your obedient Servant,

W. B. HEBERDEN,

Ralph Simey, Esq.

Assistant Secretary.

To this shifty letter, Mr. Simey wrote as follows:—

Durham,
5th October, 1893.

SIR,—In answer to your letter of the 2nd instant, I have to inform you that Mr. Stock still maintains the accuracy of his analysis, and as there seems to be no possibility of reconciling the discrepancy between it and the analyses which have been made in the Board's Laboratory, I have to suggest that either (1) Mr. Stock should attend at the Board's laboratory and see the process repeated there, or (2) that one of the chemists of the department shall visit Mr. Stock's laboratory at Darlington, and examine his process. And I shall be glad to hear from you with reference to this proposal at your early convenience.

Yours faithfully,

The Secretary,

RALPH SIMEY.

Inland Revenue Commissioners.

After several attempts to wriggle out or confuse the issue, the Somerset House officials eventually wrote the following to the Durham County Council:—

Inland Revenue,
Somerset House, London, W.C.
15th November, 1893.

SIR,—With reference to your further letter of the 11th inst., I am directed by the Board of Inland Revenue to acquaint you that if Mr. Stock attends here, as requested by you on behalf of the Durham County Council, he would not only be shown, as a matter of course, the details of the examination of the two samples of reference lard; but the systems of analysis followed by him and the Board's Chemical Officers would, if necessary, be also compared, to show how the results obtained from the examination of the two samples led to different conclusions as to the purity of the lard.

Your obedient servant,

W. B. HEBERDEN.

Ralph Simey, Esq.

The Somerset House chemists having thus screwed their courage to the sticking point on paper, Mr. Stock proceeded to avail himself of the invitation, when the following extraordinary course was adopted by the Somerset House chemists:—

County Analyst's Office,
Darlington,
December 4th, 1893.

SIR,—

1. I have to inform you that, in accordance with the arrangement made with the Inland Revenue Authorities, I met the principal of the Inland Revenue laboratory, Dr. James Bell, with Mr. Bannister and Mr. Lewin, at Somerset House, on Wednesday 29th ultimo. I would remind you that the interview arose from the fact that two samples of lard, which had been certified by me to contain 5 per cent. and 7 per cent. respectively of beef fat, had been referred to the Somerset House Analysts, and had been declared by them to be free from that adulterant.

2. The proceedings at the interview were as follows:—

3. My request that the samples in dispute should be re-analysed in my presence was refused.

4. My request to be allowed to analyse the portions sent to Somerset House, in presence of the three Analysts concerned, was refused.

5. My request that I might be allowed to take portions of the samples and analyse them for my own satisfaction, though accompanied by my undertaking to communicate my results privately to Dr. Bell and to no one else, was refused.

6. I was informed that all my requests were refused on the grounds that (a) every care had been taken in the analyses; (b) that Dr. Campbell Brown (who had been imported into one or both cases by the wholesale merchants) ought to be a party to any re-analysis; and (c) that there was no precedent for such procedure.

7. I then submitted to a three-cornered cross-examination on the method of analysis I devised and employ; this lasted for about an hour and a half, at the close of which I was assured that I had perfectly met every point of objection.

8. I then endeavoured to overcome Dr. Bell's objection to any re-analysis of his samples, by pointing out that with regard to (a) the care taken in the analysis, I did not doubt it, but that if he were absolutely certain of his results no re-analysis could lead to the discovery of a constituent which did not exist; (b) that since Dr. Campbell Brown was with them, and not against them, his presence at a re-analysis was unnecessary; and as to (c) I said that your correspondence with the Inland Revenue Office had created a precedent.

9. I also stated that I had come to them with the clear understanding that the disputed samples, the very sole and centre of the whole matter, were to be disposed of by re-analysis before anything else was talked about; and I again urged my request by pointing out that by no other method could we arrive at a definite and satisfactory solution of the existing problem.

10. I told them that my process of analysis had been accepted by many leading Food Analysts as the only direct quantitative process in existence for the estimation of beef fat in lard, whilst their own results had been traversed by four of the most eminent Public Analysts in the Kingdom.

11. I showed them that out of 27 prosecutions instituted in the County of Durham upon my certificates against vendors of lard containing beef fat, only two had failed, and that these two were concerned with the samples now in dispute, and I further reminded them that, on a previous occasion, I had offered them the details of my method, that they had accepted my offer, that they had done so without a word of contention, and that they had then supported my certificates, 7 per cent. only of beef fat being in question.

12. I said that, so far as I could gather from the questions they had been putting to me, I had formed the opinion that we only differed with regard to the microscopical examination of the separated stearinised ether deposits. I illustrated my argument by photographs of lard, and mixed-lard-and-beef ether-deposits taken by myself. I showed them how the difficulty had, in my opinion, arisen, and I told him how in my own practice I overcame the difficulty. I asked them once again to have their samples re-analysed in my presence, and so put it out of the power of traders to presume upon our differences.

13. In reply they thanked me courteously for my trouble, cordially testified to my knowledge of the subject, and refused to re-open the question on the disputed samples. At the same time they offered me every facility for showing them how I conducted my process on a variety of other material, but I felt it to be my duty to adhere strictly to what I consider to be the strong point of the situation, especially as there was nothing to be gained by any departure from it.

14. In conclusion, I acknowledge with pleasure the cordiality and courtesy with which I was met and treated throughout an interview of a very delicate and difficult nature.

I am, Sir,

Yours faithfully,

W. F. KEATING STOCK.

Ralph Simey, Esq.

Anything more pitifully abject than this evidence of the wholesome fear the Somerset House chemists have of demonstrating that they are capable of accurate food analysis it would be difficult to imagine. Dr. Campbell Brown, precedents, anything and everything that could possibly afford ground for a shuffle, were seized upon by the poor Somerset House pseudo-Analysts, thus at bay, well knowing as they did that if they set about analysing anything in the presence of a competent Analyst they would betray their incapacity.

We do not wonder that in the face of this manifest fear the Durham County Council wrote that they "cannot" in the future undertake to accept as satisfactory the

"analyses of lard made by the Inland Revenue Board's chemical officers, or with their certificates under Section "22, of the Adulteration of Food and Drugs Act, 1875." It is high time the Inland Revenue Commissioners took seriously into their consideration the scandalous state of things here disclosed. Meanwhile there is a moral which the American "beef stearine mixing ring" may take to heart. They may mix at least 5 per cent. with perfect safety, for Somerset House chemists are incapable of analysing and detecting it. They may also brand their lard English, Irish, or what they choose, for Sir Courtenay Boyle, who draws £1,800 per year of public money at the Board of Trade, and the Right Hon. A. J. Mundella, who sponges upon his adopted country for £2,000 per year at the same Board, have told the American beef stearine gentry that they may offend against the Merchandise Marks Act with impunity, mark their hams and bacon English or Irish—in point of fact do what they tarnation please—for the Board has no intention to enforce the Merchandise Marks Act. Is there any wonder that with ignoramus as scientific advisers, and worse than ignoramus as permanent secretaries or responsible heads of public departments, trade should be going from bad to worse in the United Kingdom? The wonder is, that with the throttling English and Irish trade receives from Government departments, it contrives to breathe at all.

IS THIS MR. WILLIAM BROWN AGAIN?

We have chronicled the doings of the Farmers' Direct Supply Association and the presentation of Mr. Brown and his milk-and-water-traps at court so often that we should not be surprised to find the fine Roman hand of the milk-and-water king in the following case:—

A singular charge of assault was investigated by Mr. De Rutzen on January 18th, the complainant being Alexander Grant, an Inspector under the Food and Drugs Act, in the employ of the Chelsea Vestry, and the defendant (who was arrested on a warrant for failing to appear to a summons) a milk carrier named William Wren, late of Henley-street, Battersea. On the morning of the 2nd inst. the Inspector took a sample of milk from the defendant in Edith-grove, Chelsea. Defendant became very excited, and told the Inspector that if he did not acknowledge that the purchase was one of skimmed milk he (Wren) would break every bottle he had containing samples. Defendant, it was alleged, twice struck the Inspector on the chest, knocked his assistant's hat off, and kicked at the bag in which the sample bottles were deposited. Wren was taken to the police-station before he would give an address, and when he did, the number turned out to be incorrect. Mr. Francis Smith, who prosecuted for the Chelsea Vestry, said there was a good deal behind this case, and if the defendant would give information to enable the Vestry to convict the real vendor of the milk they would be prepared to suggest a very lenient course with regard to Wren. On the barrow which the defendant sold from the name of the "Farmers' Direct Supply Association" appeared. Mr. Philcox, solicitor for the defendant, said Wren could give no information, for he was selling the milk on his own account. The young man much regretted what had occurred. On his barrow was an announcement that the milk was sold as skimmed. Mr. Rutzen said perhaps the defendant would think over the suggestion which had been thrown out, and deferred his decision until he could hear a summons for adulteration against the defendant, the milk having been proved on analysis to be deficient in cream to the extent of 80 per cent.

LAILAW v. WILSON.

The Chief Inspector to the Durham County Council, Mr. B. Scott-Elder, says in regard to this appeal case: "The decision in Laidlaw v. Wilson has been much misunderstood by tradespeople generally, owing, no doubt, to imperfect reports of the case. The Court did not hold that an invoice is a warranty, but that a written contract note and an invoice, both stating the thing sold to be pure together constitute one."

POISONS IN PATENT MEDICINES.

FREEMAN'S CHLORODYNE.

At Stockton-on-Tees [County Court, on January 23rd, His Honour Judge Turner, heard an action, instituted by the Pharmaceutical Society against G. R. Toogood, managing director of the firm of Messrs. Toogood & Co., Limited, grocers, Stockton, for an offence under the Pharmacy Act of 1868, for having sold a bottle of Freeman's Chlorodyne, a proprietary medicine containing in the half-ounce bottle 1·09 of morphine, a poison under the Act. The Act specified that only qualified chemists and qualified assistants should sell poisons. Mr. Bonsey, for the defence, argued that the charge was for selling chlorodyne and not morphine, and that inasmuch as chlorodyne was not a preparation of morphine, but a compound containing some eight or ten different drugs, there should be no conviction. His Honour said he was bound to follow the decision laid down in the case against Piper, and imposed a fine of £5 and costs. He declined to give leave to appeal.

THE SOCIETY OF PUBLIC ANALYSTS.

The members of this society held their annual dinner at the Criterion. Sir Charles A. Cameron, M.D., President of the Society, was in the chair, and amongst the company were Commander Lovett Cameron, Dr. Stevenson, Dr. Allan, Dr. Abraham, Dr. W. R. Smith, Dr. Wright, Dr. Muter, Dr. Sykes, Dr. Voelcker, Mr. Otto Hehner, Mr. A. H. Allen, Mr. Cassal, Mr. Newlands, Dr. Lovatt, Dr. James, Mr. J. Baynes, Mr. E. W. T. Jones, Mr. J. Hughes, Mr. B. Blount, Mr. C. Cribb, Mr. R. Bodmer, Mr. J. K. Colwell, Mr. Ekins, Mr. B. Kitto, Mr. S. Harvey, Mr. Leo Taylor, Dr. Swete, Mr. M. Henry, and the hon. secretaries, Mr. E. J. Bevan and Dr. Bernard Dyer. Dr. Allan, Medical Officer of Health, Strand Board of Works, proposed the toast of the evening, and remarked that some local authorities seemed to think that the Public Analysts could be done without, while others regarded them as necessary evils, who should do as little as possible and be paid as little as possible. He wished the public and their representatives knew better what the work of a Public Analyst was, and what skill was required to carry out the intricate processes which were needed for the detection of adulteration—processes which, as the adulterator was constantly finding out new methods, were becoming more and more intricate. In days when even the cow had learned how to add water to the milk before it was given—(laughter)—they would see what skill was needed for the detection of adulteration. It was therefore very necessary that such a society as this should exist, and the Public Analysts were to be congratulated on having such a distinguished man for their president. (Cheers.) Sir C. Cameron, on rising to respond, was very heartily greeted. He said the membership of the society was not confined to the British Empire, large as it was, but included many eminent foreign chemists. In the course of a humorous speech, he commented on the low mean average age of the members—the only mean thing about the society—and said that in Germany they would not even be in the landwehr, but would be considered qualified for active service. Should they be called upon in such a capacity, could there be a more valiant corps than one composed of Public Analysts? On the analogy of the "stink-pot corps" of the Chinese, he would suggest that such a body should be armed with reservoirs of H₂S (sulphuretted hydrogen). (Laughter.) Dr. Wright proposed "The Vice-President." In responding, Mr. Otto Hehner spoke of the vast benefits, financially and in point of health, that had been conferred upon the public by the discoveries and practice of accurate methods for the detection of adulteration and of the state of fog in which so many of those concerned with enforcing the Acts were. That fog came up the Thames, settled itself in a dense volume over a palatial Government department in the Strand, and no ray of scientific light had ever yet been able to force its way through it. It was not, however, because the public took such slight notice of the work done in protecting them from the dangers of adulteration, that Public Analysts should be inert. They should continue to work to perfect the science of analysis and add to their already good record, hoping that some day the importance of suppressing adulteration would become more recognised. Dr. Stevenson also responded. Mr. Newlands proposed the health of the officers of the Society, and Dr. Sykes, Mr. E. J. Bevan, Dr. Bernard Dyer, and Mr. E. W. Voelcker replied, and the health of the president was subsequently proposed by Dr. Muter. Excellent music was provided under the direction of Mr. Alfred Smythson, the performers being Mr. Septimus Marsden, Mr. Walter Fletcher and Van Mulder (cello).

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THE EXCESS WATER IN BUTTER TRADE.

On Monday, the 22nd inst., the Manchester Stipendiary, Mr. Headlam, gave his decision in the action against Mr. Shaw and Mr. Whyman.

Mr. F. O. Leak appeared for Shaw, and said the butter was purchased by Shaw under a warranty as to its purity, and therefore he was not liable under the Act. Mr. Edgar said his clients, Messrs. Kay and Co., had been summoned for giving a false warranty. That charge he was prepared to meet at the proper time. He admitted that Shaw received a warranty with the butter. Mr. Headlam said that being so, and if Mr. Sutton did not dispute the validity of the warranty, he should dismiss the summons against Shaw. Mr. Sutton said he did not dispute the warranty. The only stipulation he made was that Mr. Kay should not leave the Court. Mr. Edgar said he would take care of that. He was there to fight the warranty. Mr. Headlam said that being so he should hold that the warranty absolved Shaw from any liability. Mr. Leak asked for costs, but Mr. Headlam said he did not think it was a case in which he could grant costs. Mr. Edgar said he presumed that the same decision would apply to the case of Philip Whyman, who was charged with selling butter which contained a still less percentage of water than in Shaw's case. He, too, purchased the butter under a warranty. Mr. Headlam: Certainly.

We cannot congratulate the Manchester authorities upon their management of these prosecutions. They were perfectly well aware that both the retailers were selling the butter in absolute good faith, and the authorities also knew that the retailers were justified by the "warranties" they held. To therefore put them to the expense of defending costly proceedings, which could result in nothing satisfactory, is a course we cannot understand, especially as the Corporation had full cognisance of the fact that a "warranty" would be relied on, and had even summoned the wholesale dealers, Messrs. Kay & Co., on the charge of issuing a false warranty. As matters stand, nothing is done, time is wasted and expense incurred, and the whole case will need to be opened *de novo* in the action against Messrs. Kay & Co. The Manchester grocers who came to the aid of Mr. Shaw in this case did not do so from any sympathy with the "excess water practice," but because they regarded him as the victim of a game in which the greatest sufferer is the retailer who pays butter price for the excess water, only to find it flood his slabs and cause him to lose money. One consolation only there is in the cases up to the present. The evidence of Sir Charles A. Cameron, President of the Society of Public Analysts, of Mr. A. H. Allen, Canon Bagot, and Mr. Long, renders it extremely improbable that the class of witnesses unknown in scientific circles, and undistinguished in the paths of analysis, who by the sweeping nature of their evidence seemed to regret that they were not retained to swear that Irish butter could be pure and contain 40 or 50 per cent. of water, may, for very shame sake, hide themselves from the public gaze in future. The cynic who remarked that "anyone wishing to roast an Irishman could always get another to turn the spit" has the bitterness of his gibe corroborated by these so-called "experts," who, to conserve a practice that, pursued a little longer, would have utterly ruined the Irish butter trade, step gaily into the witness-box at the bidding of a gang of Irish "butter and water fakers," and state that, which every man having a particle of knowledge of butter-making knows, is absolutely without a shred of foundation. A pretty and patriotic way, truly, in which to cut their country's throat. We would regret if belief could be given to any such evidence, for an all-powerful reason. It would proclaim to English buyers of Irish butter that which is absolutely untrue, and warn them off dealing in it.

On the same day that Mr. Headlam dismissed the cases against Shaw and Whyman the case against Mrs. Madders was taken.

THE SOMERSET HOUSE PRINCIPAL.

Being unable to find an Analyst of capacity in food analysis amongst the chemists in the chemical department of the Inland Revenue to succeed Dr. Bell, who in the ordinary course would have retired at the end of the year, the Inland Revenue Commissioners requested Dr. Bell to retain his office until they could arrange for a capable successor. Professor Noel Hartley who is related by marriage to an influential person in the department, is again being spoken of for the post of principal, but the appointment of that gentleman would even make matters worse than they now are, not that Professor Hartley, is not an able chemist, but because he has no practical knowledge of food analysis—his life work having been devoted to an entirely different branch of chemistry. Mr. Bannister being concerned with the sale of food and drugs in the Civil Service Stores—clearly contrary to the spirit of the Act of which he is one of the referees, could not possess the confidence of traders as he does not possess that of analysts. What the department wants is a food Analyst of real capacity, and there ought to be no difficulty in obtaining such an one if the salary were made sufficiently large and the conditions satisfactory. Without this, scandals such as that of the Durham lard analysis are bound to arise.

BAKING POWDER DANGERS.

Baking powder, says Mr. Justice Hawkins, "is not an article of food," and it is well that the public should know that it may henceforth be adulterated at the will of the manufacturer. This queer decision of Justices Hawkins and Lawrence has naturally provoked some astonished comments in the general press. *The Daily Telegraph* says:—

"It turned out on analysis that the powder contained forty per cent. of alum and twenty per cent. of carbonate of soda, the rest being ground rice. In the appeal the technical point was raised that baking powder cannot be called a food so as to bring it within the operation of the 'Sale of Food and Drugs Act.' With this contention the court agreed, and the conviction of Mr. James has accordingly been quashed. The Judges have carefully explained that their decision is not based on the fact that baking powder is not an article of food already made up, and this is certainly fortunate, for if that had been the ground of the judgment it would have applied to all such crude articles as flour, mustard, salt, and pepper, and the heart of the adulterator would have been filled with unholy joy. It is bad enough, however, if even such a product as baking powder can be mixed with noxious ingredients without fear of punishment. To the lay mind it would seem to be common-sense that a substance used for making bread and pastry light might itself be properly described as food, more especially as about half of it was, in the instance in question, composed of such an undoubted article of food as ground rice. But upon what the 'Sale of Food and Drugs Act' really contains the Judges are, no doubt, the best authorities. Therefore the public is placed in the position of the 'buyer' in the legal maxim, who is warned to 'beware.' The poor unprotected citizen in search of baking powder must learn to protect himself, and he should be extremely careful to find out and to patronise henceforth a substitute for yeast which is medically certified to be free from adulteration. Man may want but little baking powder here below, but he unquestionably wants that little pure."

With whatever respect may be due to the learned judges who have ruled that baking powder is not an article of food, we are bound to ask is this decision either sound law or sound sense? If 40 per cent. of ground rice be not food we are at a loss to say what it is, and Justices Hawkins and Lawrence would be equally unable to tell us. It is the effect of this decision, however, that concerns the public, and as showing once more the need for a really practical, workable Food and Drugs Act, it is worth while to give it some little consideration. The baker, for instance, who sells bread containing alum even if the alum had not been put into it designedly, but was the result of using a baking powder of which alum was a constituent would be liable to be fined for adulteration, but would have no remedy under the Adulteration Acts against the really guilty person—the vendor of the injurious baking powder. The result of this will be, that every manufacturer will be able to guarantee his harmful, indigestion-producing, astringent concoction, "absolutely pure," and that healthy baking powders will no longer exist.

Thanks therefore to Justices Hawkins and Lawrence, the careful housewife who uses this or that much lauded baking powder for her bread or pastry, in future will be liberally dosing herself and family with that most objectionable substance, alum.

But this decision—bad law and bad sense as it appears to us to be—does not stop at this point of permitting any substances, however injurious to health they may be, to be introduced into baking powder. If baking powder be not an article of food because it is not eaten as such, then yeast is not an article of food, nor is tea, or coffee. Yeast is on exactly the same plane as baking powder, being a mere leavening agent; tea is not eaten as a food, nor is coffee, they are both mere infusions. Tea may therefore—vide Justices Hawkins and Lawrence—be adulterated without fear of punishment, because, not being a food but only an infusion, it does not come within the provisions of the sale of Food and Drugs Act, save so far as Section 30 provides for its examination at the Customs department. We recently commented upon the fact that a machine for "faking" worthless tea, and giving it the appearance of the best genuine tea, is being used by some of the largest packet tea firms. Now that they have the implied sanction of Justices Hawkins and Lawrence who have ruled baking powder not a food, the tea-swindling gentry may adulterate it at their own sweet will. We have pointed out the fact that one of the most dangerous of poisons—lead—has recently been discovered present in teas taken for an analysis over important areas, but Justices Hawkins and Lawrence having given the command "*que Messieurs les assassins commencent*" lead, or any other poison, has as much right in tea as injurious alum has in baking powder, and as lead is a useful "faking" article for teas, the devotees of that beverage have an alarming prospect before them. But the whole thing is so atrocious, so astounding an exhibition of what the law as it exists can do, that it would be deemed impossible that it could occur, did not the records of the High Court gravely record it, and place it beyond dispute. It is, therefore, our duty to warn the public and traders of what they may expect, and to what this decision leads.

GROUND GINGER ADULTERATION.

Grocers should take warning by the first conviction at Sheffield. It is some months since we informed grocers of the practice of adulterating ground ginger by adding "spent" ginger. It is an adulteration undetectable by the retailer, and against which he can only guard himself by dealing with houses of unquestioned repute, and buying always with a "warranty." In the following case the penalty was rightly a small one. It is not likely to be so in future, now that public attention, as also the attention of the trade, have been forcibly directed to this artful adulteration. It would be a mighty boon to honest wholesale traders, retailers, and the public if, instead of our ignorant chemists at Somerset House—not one of whom knows anything of such adulterations as this, of adding "spent" ginger to the genuine article, or, if they did know of it, possesses the capacity to analyse it—we had a Government department, with genuine scientists alert to discover new forms of fraud, and that would regularly warn traders against them. It would save many scores of honest retailers from prosecutions that injure their reputations and pockets, and save millions of pounds per year to the public.

At Sheffield, on January 19th, Messrs. Nicholls and Co., grocers, of Langsett-road, were summoned for selling ground ginger which contained exhausted ginger in the proportion of 40 per cent. The Deputy Town Clerk appeared to prosecute, and Mr. W. E. Clegg was for the defence. Mr. Sayer, Deputy Town Clerk, in opening the case, said it had been known for some little time by analysts that the practice of mixing ginger exhausted of its native properties with ground ginger had been common, but until recently they had not discovered an analytical test. Now, however, they were able to separate the parts. What he had been told by the Analyst was that this ginger was used by manufacturers to aerate water, and they extracted the pungent essence of the root for the purpose of making gingerade, &c., and the ginger was afterwards ground and mixed with good ginger. Mr. Clegg, he added, had given notice of his intentions to rely on a warranty which Messrs. Nicholls had received with the article, and he had a perfect right to do that if a warranty were given. Inspector Harrison gave evidence of the purchase of the ginger. He paid three halfpence for two ounces. Two-pence for two ounces was the highest price he had ever paid, he added in cross-examination. Dr. Littlejohn, Medical Officer of Health, was called by Mr. Sayer, and asked what would be the effect of the addition of the exhausted ginger. He said it would weaken the pungency of the whole. The Magistrates: Practically, as an illustration, it would have the same effect on the ginger as the addition of water would have upon milk. Dr. Littlejohn: Practically, it would. The Magistrates: Or the effect would be the same as extracting cream from milk. Dr. Littlejohn: It is very similar; it is extracting the active principle. The Magistrates' Clerk: What causes the power of the ginger to go? Dr. Littlejohn: It is exactly like tea. A second infusion is always weaker than the first. Ginger is used as a tonic, and for the stomach, and, therefore, if you extract the active principle, and take what is left, you have a weaker extract. You get the goodness out of the ginger as you extract the good out of tea. Mr. Clegg addressed the Bench for the defence. It was no part of his duty, he said, to defend this ginger if it was a preparation which contravened the Act. This was, as far as he knew, the first case of its kind which had been brought into Court, and it was a very important matter indeed to grocers all over the country. There was no evidence before the Court that this ginger contained anything except ginger; there was no adulteration of it, there was no foreign body put into it. The only point the Corporation made with regard to it was this, that, given a certain standard, which was not before the Court, this ginger was weak. He laid great stress on the important point that there was no standard of pure ginger before the Court, arguing that a standard could not be assumed, and that the non-existence of a standard deprived the prosecution of a starting point. Further, he contended that it did not prove an offence under the Act if a purchaser got something weaker than he expected. Tea he took as illustrating the varying qualities of an article, both as to quality and price, and he asserted that the same conditions were associated with ginger. As to the question of warranty, Mr. Clegg said that the defendants had bought the ginger from Messrs. Drysdale, Denison, and Co., of Upper Thames-street, London, whose traveller assured them it was pure, and that they would be quite safe in selling it. When Messrs. Drysdale and Co. were informed that samples of this ginger had been taken for analysis, they wrote to the defendants saying that it was perfectly genuine. The defendants were, therefore, protected under the Act, as they had a written warranty from the wholesale dealers that the ginger was all right. Messrs. Drysdale and Co. had been informed that this summons had been taken out against the defendants, but they had not taken the trouble to attend and defend the case. He argued, in conclusion, that Messrs. Nicholls purchased the articles as the same in nature, substance, and quality as that demanded, that they had a written warranty to that effect, and that they had no reason to believe that it was anything different. Mr. J. Goodall, managing partner of the firm of Nicholls & Co., gave evidence in support of Mr. Clegg's statement, and in the course of further argument, the Magistrates said they took it that there was no imputation on the firm. It was merely a test case as to whether it was a right thing to use exhausted ginger. Mr. Clegg: I am glad to hear you say that. Mr. Goodall, answering a further question, said that the ginger cost him 6d. per lb. wholesale. The highest price he had ever given for ginger was 3d. per ounce at a chemist's. The Magistrates: There is a difference between buying at a chemist's and a grocer's. The ordinary "ginger of commerce" is two ounces for three halfpence. Mr. Sayer replied to Mr. Clegg's

arguments. On the question of standard, he could not conceive that there could be a better standard than pure ginger, and that was, no doubt, where the Analyst started. There was another case of a similar kind, the defendant being J. E. Peel, grocer, of Langsett-road; and, as he purchased the ground ginger of Messrs. Nicholls, it was agreed that the decision in one case should govern both. The Magistrates, after retiring, said that having regard to the fact that the Analyst's certificate was practically unchallenged, they were of opinion that the defendants had sold an article which was not of the nature, substance, and quality demanded, and under those circumstances there would be a conviction. They believed, however, that no fraud was intended, though perhaps some carelessness had been shown by Messrs. Nicholls, and a nominal penalty of 10s. and costs only would be inflicted in each case. Mr. Clegg intimated that Messrs. Nicholls would pay the fine and costs in Mr. Peel's case.

SHEFFIELD SETS AN EXAMPLE IN HIGHER PENALTIES.

On January 19th, Mr. Henry Sayer, Deputy Town Clerk, said to the Magistrates that he had been instructed by the Health Committee to say that it was very much to be regretted that the penalties which had been inflicted in milk cases in Sheffield were not deterrent. That was clearly shown by the fact that offenders came into court again and again, and it was known that they openly boasted they could easily recoup themselves between the time the summons was issued and the hearing of the case. When the Magistrates had made up their mind on a case he would like to be allowed to say whether anything had been heard of the defendant before. Edwin Birks, for refusing to sell milk for analysis, was fined £3, including costs.—William R. Hurt summoned for selling milk with 20 per cent. of added water, was fined £3, including costs, and warned that if he came again for a similar offence he would have a great deal more to pay.—Richard Walker, was fined £3 and costs, for selling a pint of milk containing 1.6 per cent. of added water.

Albert Hall was summoned for having sold milk which contained 12 per cent. of added water. The defendant had very little to say, and evidence of previous offences having been given, it transpired that he was in the service of a William Sidwell, of Monmouth-street. The Magistrates asked why the employer was not summoned, and Mr. Sayer said that if he summoned an employer in such a case he came to court and said, "I sent this man out with perfectly pure milk, and if he watered it I am not responsible." The employer in this case was, he believed, the sinner; he did not think the defendant took out the milk and then adulterated it. The Bench said they believed the defendant knew what was going on, and find him £5, or 14 days.

George Duke, Clough Fields, milk seller, was summoned for having sold to Inspector Gibson skimmed milk containing 50 per cent. of added water. Mr. C. Robinson appeared for the defendant. The defence was that the milk was made up by the defendant's wife as a present to her brother, and that the boy who was taking it there ought not to have sold it. The Bench imposed a fine of £3, or 14 days.

COFFEE AND CHICORY.

Thomas Cawthorne, 249, Upper Allen-street, was summoned for having, on the 12th December, sold to Inspector Harrison $\frac{1}{2}$ lb. of coffee containing 70 per cent. of chicory. The defendant said he sold the article as he bought it. Mr. Sayer informed the Magistrates that the article was enclosed in a packet on which there was a label stating that "this is sold as a mixture of chicory and coffee," but that, he held, was not sufficient in itself to cover the offence in this case. Section 8 of the Act provided that no person should be guilty of an offence in respect to the sale of an article of food mixed with another substance—as the mixture of chicory with coffee—if the mixture was not intended "to fraudulently increase its bulk, weight, or substance." He relied on the words quoted, and submitted that the view of the law which existed at the present time was that it was the duty of Magistrates to ascertain whether, in their opinion, the facts proved that the admixture of the cheaper commodity was so overwhelming as to justify the conclusion that it had been added to constitute a fraud. He quoted three cases in support of this view, in two of which the mixture of 40 per cent. and 85 per cent. of chicory respectively, had been held by the High Court, on appeal from justice's decisions, to constitute a fraud, while the third case was remitted to the justices for reconsideration to elicit an expression of opinion. Evidence of the purchase having been given, the Magistrates said that they were of opinion that the Corporation in this case were asking them to take upon themselves the onus of fixing the proportions of coffee and chicory that should be observed in mixing, and they were not inclined to take that duty. They, therefore, dismissed the case.—James Flynn, grocer, Allen-street, was summoned for selling adulterated coffee. Inspector Harrison bought half-a-pound of coffee at defendant's house, which contained 50 per cent. of chicory. Defendant pleaded guilty, stating by way of excuse that his wife who was ignorant of the business, sold the mixture. Defendant was fined £1, including costs.

THE BAKING POWDER DECISION.

The *Liverpool Mercury* says:—

"The Divisional Court has, however, quashed the conviction, for a reason which appears to be more subtle than convincing. If the provision merchant, the retail grocer, and the general purveyors of such food products understand this dictum, many of them, who have so often been impressed with the uncertainty of the law, will be happier than they have been in past times, owing to the conflicting decisions of the courts. It may, however, be suggested that in a matter affecting to such an important extent the common interests of all classes there is a strong argument for placing the law relating to food and drug supplies on a more intelligible and rational basis."

DR. THORNE THORNE AND DIPHThERIA.

CONDEMNATION OF THE SCHOOL SYSTEM.

In his lecture at the Parkes Museum last week Dr. Thorne said, "I don't think I ever went into any house, unless it is my own, where I didn't find bad sanitary conditions." These conditions might have influence, but they were OVERWHELMED BY OTHER CONDITIONS which caused the disease. Typhoid was very largely due to bad sanitation, but he was glad to say that in improving these conditions we had moved faster than any nation under Heaven.

► The reduction in enteric fevers from 1871 had gone down from 40 to 17 generally, and in the Metropolis, from 27 per thousand in the seventies' it had gone down to 17 and 15, so that the SAVING OF LIFE HAD BEEN ENORMOUS.

But just as these enteric diseases had gone down diphtheria had gone up. The process was exactly reversed. From '09 in the seventies in 1890 it was up to '18—just double—and during the last two years it had nearly trebled, in spite of the fact that the sanitary circumstances had been so vastly improving. They had been working at the Local Government Board for twenty years to try and solve THIS MYSTERY, but no Inspector had been able to identify water as a cause of diphtheria. He saw no direct connection between bad sewerage and diphtheria.

But it was essentially an infectious disease, and the emanations from the throat and mouth were intensely infective. When these got into the sewers and cesspools the drains might be infected. There was a relation between the influence of the soil and diphtheria. People who inhaled foul air did get sore throats, and a sore throat was especially susceptible to diphtheria. Where there was wet from the ground in valleys or in damp places the tonsils would become almost excavated with "sore throat," and the ordinary sore throat was infectious. His theory was, that there was a *progressive development* of infection, just as there was of a hot-house plant under cultivation.

Diphtheria chiefly attacked children of school age, from five to twelve and up to fifteen, and it was clearly proved that the disease was influenced by school attendance. Of scholars between three and twelve in a particular school 59 per cent. were attacked, and from twelve to fifteen only 5 per cent. The great authority, Dr. Power, had proved conclusively that by an aggregation of children at school you could deliberately manufacture a potency of diphtheria. (He here gave some startling facts with reference to a particular school that had been thrice closed and each time the disease had been thoroughly stamped out, only to reappear when the school was reopened).

THE REASONS

for this were chiefly the *special infection from the breath of those who were congregated together for any length of time, and the limited space set apart for the scholars. A certain space was required in all schools, but generally the teachers monopolised two-thirds or three-fourths of it, and the children were crowded together to breathe each others breath.* There was the danger under the age of three of children passing sweets from mouth to mouth, of drinking from the same unwashed cups, the absence of ventilation, and other conditions.

He strongly condemned the system of the school attendance officers whipping-up the scholars, and insisting on their attendance whether they had got sore throats or not. This promiscuous insistence upon the attendance of children to keep up the school averages had a fatal influence on them.

Then he laid the greatest possible stress on the importance of the

MILK QUESTION.

A large number of epidemics had been traced to milk. Sometimes they would find all the cases of diphtheria on one milk walk or a district served from one particular shed. Those who drank raw milk suffered most, whereas those who only took milk hot or cooked escaped. There was more danger from cream than from milk. He advised everyone to LEAVE OFF DRINKING RAW MILK, and they would escape from a lot of diseases, including typhoid, scarlet fever, and largely from diphtheria as well.

THE LOWER ANIMALS

were frequently the cause of infection. The cat was an animal that could be inoculated with diphtheria, and it suffered frequently from a disease that was parallel to the human disease. Unless Sanitarians made haste to find out what diphtheria was, and investigate it, it would become as deadly as smallpox and scarlet fever were, and they should not fail to deal with it because they might be interfering with somebody's trade. Among the means of

PREVENTION

he insisted on absolute isolation of the sick. Isolation in the hospitals was not satisfactory. The mortality in hospitals was terrible, and the system of the aggregation of the sick was wrong. What he insisted upon was plenty of *linear space*: he did not care two straws what the cubic space or the height of building might be. No child even from a house where there was a sore throat should be allowed to go to school. The system of keeping up the "average attendance" had done a vast amount of injury. Everything that touched the mouth and lips of a patient should be burnt, houses should be chosen where there was no moisture or damp foundations, and no foliage should be permitted to grow round a house.

AN ACCOMMODATING REFRIGERATOR.

There is a sameness about adulteration defences generally, and the perusal of them would be stale, flat and unprofitable did not one occasionally light upon an oasis in a desert of dreariness, such, for example, as a "Lloyd's eight per cent. of water herd of cows," or similar non-existent wonder. We expect after the following case there will be a run on the refrigerator which, vide Mr. George Embrey, Gloucestershire County Analyst, was guilty of adding 20 per cent. of water to the milk of Alfred Merrett farmer, North Kibley. Mr. Merrett appeared at Bristol Police-court on January 12th, Inspector Thomas Hardy proved visiting the St. Philip's railway station on the morning of the 4th December last, and seeing two cans of milk delivered there by train and consigned to Messrs. Stinchcomb. One can was full of milk, the other partly so. He obtained samples from each can and had taken the same to the City Analyst, who declared the sample from the former tin pure, and the one from the latter tin adulterated to the extent of 25 per cent. of added water.

Mr. Stinchcomb gave evidence as to complaining of the poor quality of the milk sent him by the accused.

Mr. George Embrey, County Analyst for Gloucestershire, was called by Mr. Clifton, and stated that at the request of the defendant he visited his farm on the 22nd December, where he saw the cows milked, and the milk conveyed to the refrigerator, and he afterwards took samples of the same, and on analysis found them to contain over 20 per cent. of added water. He was unable to account for this, and afterwards examined the refrigerator and noticed that the tubes were bulged out owing to the action of the frost. He afterwards took samples of the milk before and after it had passed through the refrigerator. In the former case it was pure, but in the latter there was 8 per cent. of added water. The difference between the 8 per cent. and the 21 per cent. of added water in his analysis might be accounted for by the amount of pressure used in the refrigerator, as he found that the water leaked from the pipes into the milk. The Bench, after retiring to consider their verdict, announced that they had carefully considered the case and the evidence of Mr. Embrey. It was admitted that the milk contained more water than it ought, and they had therefore come to the conclusion that the defendant was guilty of selling the milk containing the added water, and he would be fined £10 and £5 ss. costs. As there was stated to be a previous conviction we should advise the farmer to get a less accommodating refrigerator.

ALUM IN BAKING POWDER.

JUSTICES HAWKINS AND LAWRENCE DECLARE BAKING POWDER NOT AN ARTICLE OF FOOD.

(Before Mr. Justice HAWKINS.)

JAMES V. JONES.—Judgment has been delivered in this case, which was heard before Justice Hawkins and Lawrence last December.—The Appellant, James, appealed against a conviction by the Justices of Glamorgan under the Food and Drugs Act for selling Excelsior Baking Powder which was partly composed of alum. The result of the presence of this ingredient was said to be that when mixed with flour for the purpose of producing food after carbonic-acid gas had been generated and disseminated in order to make the pastry, bread, etc., rise, alumina, a substance injurious to health, was present. This, it was contended, was an infringement of the Food and Drugs Act, and, proceedings being taken, the Justices convicted, and their decision was affirmed by Quarter Sessions. Mr. Justice Hawkins said the Court had come to the conclusion that baking powder was not an article of food within the meaning of the Food and Drugs Act. They did not intend to convey, however, that nothing could be an article of food unless made up, and that articles such as flour, mustard, salt, pepper, etc., came in the same category as baking powder. The conviction was accordingly quashed. Mr. Justice Hawkins said they had no power to give costs or they would do so.

"FOOD & SANITATION" has over 50,000 Readers: Medical Practitioners, Sanitary Inspectors, Food and Drugs Acts Inspectors, Wholesale and Retail Grocers, Weights and Measures Inspectors, Town Clerks, Solicitors concerned with the Food and Drugs and Public Health Acts, Surveyors, Medical Officers of Health, and the General Public.

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THE MARGARINE ACT.

At West Bromwich Police-court, on January 17th, Francis Adie, grocer and provision merchant, of Bull-street and Spon-lane, West Bromwich, was charged at the instance of Mr. J. E. Morris, Inspector under the Food and Drugs Act, first, with selling butter not of the quality demanded; secondly, with exposing margarine for sale unlabelled; and thirdly, with failing to deliver the sample in a paper marked with the word "margarine," in accordance with the Act. Mr. J. Clark defended. Mr. Morris explained that the defendant was in a large way of business in the grocery trade, having several branch shops. On December 23rd one of his servants visited his shop in Spon-lane and purchased a number of articles, amongst them being 1lb. of butter, for which 1s. 2d. was paid. This, upon being analysed, turned out to be margarine. The other two offences arose in connection with the sale of the butter, the sample being exposed to view without a label upon it, and was handed to the purchaser in plain paper. It was a very serious offence, considering it was sold on the Saturday night, when most of the working classes did their marketing, and by charging 1s. 2d. per pound for the sample the defendant rendered himself liable to a penalty of £150 for the three offences. He asked the Bench to deal with the matter with a strong hand, and to support the working classes in obtaining a pure supply of food. Henry Toy proved purchase of the sample in question, which he said was supplied to him by one of the defendant's assistants. Samuel Toy said he informed defendant's manager that the sample was purchased for analysis. Mr. Morris said the sample had been analysed by Mr. White, the Public Analyst for West Bromwich, and was found to be adulterated with 70 per cent. of fat foreign to butter, and was what was known as margarine. Mr. Clark asked if the sample was not a good class of margarine, but Mr. Morris replied that there was no class in margarine, and the highest price for it should not exceed 6d. or 7d. per lb. Mr. Clark, for the defence, pleaded that defendant's servants were very busy, and the youth in the shop supplied the sample by mistake, as four different kinds of butter were on the slab at the time. Defendant in his evidence said the margarine cost him 11d. per lb., while the butter only cost him 10d. per lb. The Bench regarded it as a very serious offence, and said the public must be protected against such frauds. They imposed a fine of £10 and costs in the first case, and 40s. in the other two, the total amount of the fines and costs being £16 9s. 6d.

CHEMISTS AND DRUG ADULTERATION.

Now that the chemist is not only moving heaven and earth to secure for himself a monopoly of the profits out of patent medicines, but is plotting and working to secure also, the sole sale for himself of carbolic preparations, the following revelations as to the trustworthiness of the drugs vended by chemists have an interest. They are from a report just made to the Durham County Council by the Chief Inspector, Mr. B. Scott-Elder:—

"I have to call your attention to two cases of adulterated drugs in which proceedings were taken against a Chemist. The statutory penalty is £20 for the first offence, but although the Analyst had certified that one of the drugs in question—sweet nitre—was useless for the purpose for which it was intended, the Justices inflicted a fine of 2s. 6d. only in each case. There are two ways by which a defendant may be safe-guarded from loss from prosecutions under this Act. The first is to obtain a written warranty by which the authorities would be enabled to proceed against the wholesale dealer; the second is to proceed against the wholesale dealer himself, and by special provision in the Act he may recover not only damages for breach of contract, but also the amount of penalty imposed, and his own costs, as well as those paid to the prosecutor. If a tradesman does not choose to avail himself of either of these safeguards, it does not appear to be any reason why he should escape with a merely nominal penalty, nor why the public should be put off with a vastly inferior article, especially when that article is a drug and vended by a chemist."

DECLINING CO-OPERATION.

Much comment has been caused in the township of Droylsden through the action taken by the committee of the Droylsden Industrial Co-operative Society in discharging five of their employés—namely, three grocers, a butcher, and a milliner. In common with many other firms, the business at the Co-op. has, as the balance-sheet shows, decreased; and the members decided at the last quarterly meeting that the step recorded must be taken. The question that has been discussed is whether it would have been better to let all the employés work short time, and so keep them all at work, in preference to discharging some of their number. The former view appears to have many supporters, but we understand that there were some difficulties put in the way of that being done by the employés themselves.

TRICHINÆ.

Trichinæ (*Trichina Spiralis*) are among the deadly enemies of man and of all pork eaters. They are a very minute organism, and generally are of a spiral nature, the female being 3-25th of an inch in length. Their reproductive powers are enormous, 60 to 80 animals at a time being brought forth by each female and altogether about 1,500. They usually work their way from the intestines of a hog by boring and so get to the muscles, where they coil themselves up and grow. They become covered with a membrane and are described as being encysted. They then remain passive unless the flesh is eaten by man or other animal. When passing through the intestines the shell becomes dissolved, and the young bore their way through to the muscles as described, and the horrible disease trichinosis is the result. Cooking is said to destroy the embryos, but that is very doubtful.

CORRESPONDENCE.

LARD SHIPPERS' WEIGHTS.

To the EDITOR OF FOOD AND SANITATION.

SIR,—Public attention has been drawn to a poor coal dealer who was fined for having his bags 2lb. to 12lb. short of what they were labelled. But the public are not aware that there are many packages of American lard in the Liverpool market that are 2lb. to 12lb. short of what they are labelled, and such are thrust upon the unsuspecting shopkeeper as full weight. This is a great injustice to the shopkeeper, who, unless he gets honest weight, cannot pay 20s. in the £1, and how can our local lard refiners compete with such dishonesty when they are compelled to guarantee weight? There has been a lively discussion among the trade relative to the introduction of false balances from America, and it is hoped the matter will not end by the decision of a court of arbitration, but will be taken to a court of law, when the dishonest practices will be exposed and all defrauders be prosecuted and fined, as was the poor coal dealer. The Adulteration Act has worked wonders in the lard trade, and we hope that a "Short Weights" Act will now be enforced. Meanwhile, let all buyers test the weight of every package of lard.

FOUND FOR FOUND.

IRISH BUTTER AND EXCESS WATER.

SIR,—May I through your columns suggest that a public meeting of creamery and factory proprietors be held in Dublin as soon as possible, and an invitation be sent to every Irish M.P. to attend, in order to demonstrate that the class of butter made at creameries does not contain more than 8 or 9 per cent. of water maximum, in fact not more than the best Danish.

The statements made in Manchester by butter buyers from Limerick are likely to prove most damaging to the Irish trade, if it is not at once clearly shown that the description of butter they were speaking about was the heavily-salted butter which, containing from 12 to 13 per cent. of salt, and 10 or 12 per cent. of water, would undoubtedly give a return of 24 or 25 per cent. of water, the salt of course, absorbing the water, being turned into brine. Besides, it used to be the custom in butter intended for the Cork market, for the dairymaid to add water to make up the standard weight of the firkin where the butter was slightly short.

The public unfortunately have got hold of a most untrue statement that the Irish butter contains far more water than the Danish because in comparing the Danish and Irish butter you ought only to take Irish creamery and factory butter, which is practically fresh butter, in competition with the Danish.

If the meeting that I suggest be held I will propose a resolution asking the Government to adopt the same standard as in Denmark, and in the maximum amount of water to be contained in fresh unadulterated butter. I shall be glad to hear from others that will co-operate with me in having the meeting held.—Yours, &c.,

RICHARD W. BAGOT.

Fontstown Glebe, Kildare, January 15th, 1894.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

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ADULTERATION APPEALS.

NEWBY v. SIMS.

IMPORTANT DECISION AS TO THE FORM OF ANALYST'S CERTIFICATE.
(Mr. Justice Day and Mr. Justice Lawrance heard these cases
on January 19th.)

There were two cases under the Adulteration Acts of 1875 and 1879, both relating to sales of spirits adulterated with water, the first being a case of rum, the other of whisky, and both raising the question whether, under the Act of 1879, it is necessary that the Analyst's certificate should show that the excess of water was such as to reduce the spirit more than 25 per cent. below "proof," as the Court, it will be seen, held. The Act of 1875 (38 and 39 Vict., c. 63, sections 18 and 21) provides (Section 18) that the certificate of the Analyst shall be in the form given in the schedule or to the like effect; and (Section 21) that at the hearing of the information on any such proceeding, the production of the certificate of the Analyst shall be sufficient evidence of the fact therein stated, unless the defendant shall require that the Analyst shall be called as a witness. Then the form of certificate given in the schedule is this:—"I, the Analyst, do certify that I received a sample, &c., and I declare, &c., and I am of opinion that the sample contained the ingredients (or parts) as under, or the percentages of foreign ingredients as under." The certificate in the present case was—"That on August 1, 1893, I received from the Inspector a sample of rum for analysis, and that I have analysed it, and find that the sample contained an excess of water above what is allowed by Act of Parliament, and I estimate the excess is 13 per cent. of the sample, and I consider it is not a sample of genuine rum." There was, it will be seen, no reference to the statutes defining what is to be deemed pure spirit. It was objected, for the defendant, that there was no proof that the certificate was not in the form given in the Act; and the Magistrates, being of opinion that the Analyst's certificate, by which he "estimated" the excess of water at 13 per cent., was not sufficient evidence to justify a conviction, therefore dismissed the information, but stated a case, on which the question of law was, "whether the justices were right, having regard to the language of the certificate, in dismissing the information," on which the Inspector appealed. The Act of 1879, section 6, says that in determining whether an offence has been committed by selling to the prejudice of the purchaser spirits not adulterated otherwise than by the admixture of water, it shall be a good defence to prove that such admixture has not reduced the spirit more than 25 degrees under proof for brandy, whisky, or rum, or 35 degrees under proof for gin. But this statute nor the older statute as to "proof" spirits were not referred to on the hearing. Mr. Macmorran appeared for the prosecutor, the Inspector, and submitted that "I estimate" was in effect the same as "I am of opinion." [Mr. Justice Day: That is so, certainly.] Then the Analyst finds positively the excess of water and gives his opinion as to the degree of the excess, and that is sufficient. Mr. Strachan, for the respondent, urged that the certificate was not sufficient, because it did not show that the adulteration was more than the proportion of water allowed under "proof" under the provision in the Act of 1879 coupled with the Act of 58 George III., c. 28, which first defined what was "proof" spirit—that is, water, 50·76; alcohol, 49·24; and the Analyst's certificate ought to have stated in accordance with this, by way of quantitative analysis—the quantity of alcohol and the quantity of water—in the sample in order to show whether it came within the provision in the Act of 1879. Mr. Macmorran, in reply, cited the recent case of "Bakewell appellant—Davis respondent" in the current volume of *The Times* Law Reports, p. 40, a milk adulteration case, in which, however, the proportions of ingredients were stated in the certificate of the Analyst. [Mr. Justice Lawrance also pointed out that no admixture of water at all was allowed as to milk.] That is so, no doubt. The Court came to the conclusion that the certificate of the Analyst in this case was not sufficient. Mr. Justice Day, in giving judgment on Wednesday said,—"I am clearly of opinion that we must support the decision of the Magistrates, though not on the grounds given by them. I think the grounds they gave were insufficient, but nevertheless their decision was right in the result. The object of the Adulteration Acts, as to articles of food especially, is most valuable, but we must see that in any particular case the offence charged is proved. In the present case the Analyst's certificate was the only evidence, and the whole question, therefore, is whether, on the face of the certificate, it appears that the offence was proved: Now, the certificate is entitled under the Act of 1879, and there is no reference to the Act of 1875, and it does not appear that the Analyst was aware of it. He proposed to give the certificate only under the Act of 1875. He states in it that he has analysed the sample of rum, and finds that it contains an excess of water over and above what is allowed by Act of Parliament, and he estimates the excess at 13 per cent., and then he states

as the result that it is not a sample of genuine rum. Now that is defective, not upon the grounds given by the Magistrates, that the Analyst gives an "estimate" of the excess of water, for it is necessarily an estimate or a matter of calculation, and the expression is appropriate, but because it states only an "excess" of water without any reference to the statutory definitions of "excess" under "proof." Before the Act of 1875 the word "proof" was in use; having arisen under the Act of George III., in which the definition of "proof" spirits was given—that is, broadly, nearly 50 per cent. of alcohol, and a trifle over 50 per cent. of water, very nearly "half and half." The Act of 1875 left it quite uncertain what was to be deemed pure spirit; it was left to be determined by the Magistrates on some popular notion of it. But the Act of 1879 contains a specific enactment on the subject that adulteration by water must be more than 25 per cent. below proof—that is, that in determining whether there has been adulteration of spirits by water it must appear that the admixture of water has reduced the spirit more than 25 degrees below proof. Now, in the present case the Analyst does not state that, but only states that there is an excess of water over what is allowed by Act of Parliament. That is, he states his conclusion as to the law. Then he goes on to say that he estimates the excess at 13 per cent. of the quantity of the sample. But that would be much less than such a quantity as would reduce the spirit more than "25 deg. below proof." He finds, generally, an excess; but an excess over what? That he does not state. He only states, "an excess over what is allowed by Act of Parliament." But that was for the Magistrates to determine, and he ought to have stated what the quantities of spirit and of water in the sample were, and then left it to the Magistrates to determine. Upon this ground, said the learned Judge, I am of opinion that the certificate was insufficient, and that therefore the Magistrates were right. Mr. Justice Lawrance said he was of the same opinion. The magistrates, he thought, had come to the right conclusion, though it was not so on the grounds they had given. The certificate of the Analyst did not show that the offence had been committed, therefore they were right in dismissing the information. Appeal accordingly dismissed.

CONDENSED "SKIM" MILK.

PLATT v. TYLER, AND WRIGHT v. SAME.

(Before the LORD CHIEF JUSTICE and Mr. Justice DAY, on
January 24th.)

These were two appeals under the Food and Drugs Act, and they came before the Court upon cases stated by Mr. Littler, the Chairman of the Middlesex Quarter Sessions. Mr. Grain, who appeared for the appellants, said that the facts of the two cases were practically the same, and the point had, he thought, been decided already by a Divisional Court in a previous case. The appellant Platt was convicted and fined for selling to the respondent Tyler, an Inspector under the Act, a tin of condensed milk from which eighty per cent. of fat had been abstracted before concentration. Appellant, the learned Counsel contended, had disclosed the fact that the fat had been abstracted, in accordance with the statute, as the following was what took place: The Inspector went into the appellant's shop and asked for a tin of condensed milk. Appellant's assistant told respondent that there were several sorts of condensed milk at different prices, 3½d. and 4½d., and so on. Tyler said he would have a tin of condensed milk for 3½d., and having been supplied with a tin, he informed the assistant that he had bought it for the purpose of having the contents analysed. The owner then came forward, and told the Inspector that the article which he had purchased was condensed skim milk, and although it bore the title condensed milk, it also had printed upon the labels information that the milk was skim milk. Mr. Bodkin, for the respondent, argued that the convictions were right, and that the case was not covered by authority. The Inspector went into the shop and asked for a tin of condensed milk, and a tin was handed to him bearing a label on which the description was printed in prominent characters. He would not of course look at the whole of the small print on the other part of the label. The Justices and Quarter Sessions had found, as a fact, that there was not sufficient disclosure of the fact of the abstraction of the fat, and that the printed matter referring to skim milk did not comply with the Act. In the case of Wright the tin of milk was wrapped in paper and handed across the counter to the Inspector's assistant, who swore that he never saw the label. The Court held that the case was covered by authority, and quashed both the convictions. Commenting on this decision the *Daily Chronicle* said: "The result of an appeal from a conviction under the Food and Drugs Act, heard yesterday, discloses two interesting facts. First, that 'condensed milk' sold in tins may have already had 80 per cent. of the nourishment extracted from it before it is put in the tins; secondly, that a microscopic announcement printed on the label to the effect that the contents are 'skim milk' will cure any cause of complaint on the part of the customer, who in nine cases out of ten never glances at the label, and is under the impression all along that he is going to receive milk as yielded from the cow. He must, therefore, now understand that 'condensation' has no virtues as a guarantee against the good old 'stripping' process so familiar to Simpson, the retailer of the sky-blue article."

NOTICE TO READERS.

Back numbers of the Journal are now very scarce, and can only be supplied in future at 3d. per copy when over a month old. Vols. 1 and 2, including index, 20s. each. Index separate, 1s. each.

YEAST !! YEAST !!

JANSEN & COMPY.,

WESTMOLENSTRAAT, SCHIEDAM (HOLLAND).

Gold Medal, Amsterdam, 1886.

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JANSEN & CO.'S PARROT BRAND.

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and Potato Spirit.*Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit*

Food and Sanitation.

SATURDAY, FEBRUARY 3, 1894.

QUE MESSIEURS LES ASSASSINS
COMMENCE.

THE recent decisions upon alum in baking powder and skimmed condensed milk have very much simplified the law as to adulteration, inasmuch as they bring forcibly to our knowledge the fact that there is no law existing to deal with adulteration that any manufacturer, who has the will and the means to carry a case to the High Courts, cannot drive a coach and four through.

For years past grocers have been asking that the invoice should constitute a warranty, and Sir Charles Cameron, M.P., introduced a bill into Parliament to make it such. He took apparently unnecessary trouble, as was shown in the appeal *Kearley and Tonge v. Supt. Byrne*, reported in our issue of Jan. 20th. A fortune awaits anyone who is rogue enough to take advantage of our Chinese puzzle of an Adulteration Act. In more than half of England the Adulteration Acts are, and have been for years, a dead letter. Enlightened centres of ignorance like Oxford and Cambridge, let year succeed year without a sample being taken under the Food and Drugs Acts. Into the parts where fraud is thus assisted, any person who chooses may send, for example, margarine mixtures invoiced and warranted to be butter, and no law will touch him. The adulterator also has even the towns in which the Acts are most intelligently enforced quite at his mercy. Any firms choosing to deliberately make a trade of selling, say a high class mixture of margarine and butter as genuine butter could do so with impunity, provided they took the precaution of sending their invoices from the Continent or America guaranteeing the produce genuine. Any prosecution brought against the retailer

WHEAT PHOSPHATES Nourish Brain and Frame, Form Bone, Teeth and Muscle, and Enrich the Blood.



TRADE MARK

Is the only Food which contains the

WHEAT PHOSPHATES extracted from Wheat Bran, and is therefore the most NOURISHING food in the WORLD.

For **INFANTS**: Developing Bones, Muscles, Teeth, Brain;For **INVALIDS**: Restorative and Invigorating; retained by the weakest stomach when all other food is refused.For **ADULTS**: A Delicious Breakfast and Supper Dish; Vitalises the brain and all the functions of the body.

1-lb. Sample in HANDSOME ENAMELLED Box sent free on receipt of 3d. to cover postage (mention this Paper)

Sold by Grocers, Chemists, &c., in tins, 1 lb. at 1s., 4 lbs. at 8s. 9d., or sent carriage paid by

FRAME FOOD CO., LTD., LOMBARD ROAD, BATTERSEA, LONDON, S.W.

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Use 4 ozs. to 280 lbs. Flour, second turn in winter.

For doughing direct, and other methods of working, address—

W. HEPWORTH, Harwich, Essex.

Most powerful Yeast known.

SUPERIOR FLAVOUR. LONGEST KEEPING.

Highest Awards, Healtheries, London, 1884.

LONDON, 1893 (last Year).

LARGEST YEAST WORKS IN THE WORLD.

Chafed Skin, Piles, Sores, Chilblains, Chapped Hands, Neuralgia, and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol Cyprus: "I have never found any thing to come up to it for neuralgia and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.
Awarded 60 Gold and Silver Medals and Diplomas.

could not succeed, and the Queen's writ is powerless to touch the gentleman working the swindle, say from Hamburg. There is no Customs' examination of butter, and even were there such an examination it is the easiest thing in the world for the distributing agent here to get over that difficulty, and by a well understood arrangement with a certain class of traders, dispose of enormous quantities of margarine as butter at prices mutually advantageous. The fear of the Customs has not prevented some half a dozen of the largest advertising tea gentry from availing themselves of a swindling machine, for turning damaged or exhausted tea into—in appearance—the choicest new tea. Recent examinations we have made of such teas have disclosed the fact that lead has been present in dangerous proportions, but thanks to Justices Hawkins and Lawrence, it is questionable if even the vendor of spurious tea containing poison could be successfully prosecuted, if he choose to appeal to the high Courts. Our able contemporary, *The Daily Chronicle*, thus forcibly puts the facts as to the present state of the law upon adulteration:—

"The result of an appeal from a conviction under the Food and Drugs Act, heard yesterday, discloses two interesting facts. First, that 'condensed milk' sold in tins may have already had 80 per cent. of the nourishment extracted from it before it is put in the tins; secondly, that a microscopic announcement printed on the label to

the effect that the contents are 'skim milk' will cure any cause of complaint on the part of the customer, who in nine cases out of ten never glances at the label, and is under the impression all along that he is going to receive milk as yielded from the cow. He must therefore now understand that 'condensation' has no virtues as a guarantee against the good old 'stripping' process so familiar to Simpson, the retailer of the sky-blue article."

There are thousands of mothers who feed their babes upon this so called condensed milk, from which practically all the fat has been abstracted. They dilute the concoction with seven or eight times its bulk of water and give it to their infants, to the great increase of infant mortality, for the substance has scarcely any value, being merely sugar and water with a trace of casein. Is there any cause for wonder at the terrible rate of infant mortality and the multitudes of rickety children? It is a common practice for mothers who are compelled to go out to work to supply a tin of this spurious class of condensed milk to the "minder" of their infants, which tin constitutes a week's food for the baby. There is not at the outside more than a day and half's food in most of these spurious condensed milks, but the mother does not know this, or that her infant is practically being starved to death. There was a possibility of compelling the makers of such milks to put labels upon them that would plainly state that their contents were "skimmed," but, thanks to Justices Day and Lawrence, such is not done, and the announcement may be as small as the conscience of the maker. It is as well that the public should know exactly where they stand, and what measure of protection from fraud or from poisoning by articles sold for human consumption the law affords them. The recent decisions have, as we said, simplified matters, and now that baking powder may contain any harmful substance the maker chooses to use, that milk need not be milk, that beer may be a chemical concoction innocent of malt and hops, and that the law protects this state of things, we may truly be said to have reached a period when "Messieurs les Assassins" may "commence" and do their work with impunity. Let us hope the opportunity for public plunder and damage will be so largely availed of that it will awaken public indignation and disgust. We may then get an Adulteration Act of a genuine character, which not even the carefully trained folly of eminent judicial lights can render ridiculous or inoperative.

THE "EIGHT PER CENT. WATER COW" AGAIN.

The moment the fiction of the cow that waters its own milk is exposed in one place it is revived in another. A person styling himself R.B.B. Blockley, Worcestershire, is responsible for the following, which he has played off on *The Birmingham Argus*.—

The following case may operate as a caution to magistrates when dealing with charges against men of good standing of dishonestly adding water to milk under the Adulteration Acts. A dairy farmer in Worcestershire had sent his milk to a London dairy company for many years, and stood among the first on their books for invariable good quality. Soon after the cows were taken in from grass complaints began to come of "watering" and for one month a surcharge of £1 13s. 0d. was made for water, with an intimation that a separation had better be made while the parties were on friendly terms. This was a serious matter for the farmer and his dairymen, as both reputation and interests were at stake. The latter at length called the attention of his employer that a certain cow had been giving an unusual quantity of milk far in excess of any other cow. A test was applied. The milk of the herd gave a thick head of cream; the milk of the offending cow had an almost imperceptible film only. Her milk has been put to another use, and from its omission the milk of the herd has resumed its former good quality; no complaint of "watering" has been made.

A DEPUTY ANALYST FOR LIVERPOOL.

A letter from Dr. Campbell Brown, Corporation Analyst of Food and Drugs, suggesting the appointment of a second Analyst to act in case of his illness or absence, and mentioning the name of Mr. Walter Collingwood Williams, B.Sc., was read at the last meeting of the Health Committee. The Committee were of opinion that any salary to be paid should be deducted from the salary of Dr. Campbell Brown. The Town Clerk was instructed to write to Dr. Brown on the subject.

ANSWERS TO CORRESPONDENTS.

J. W., F. I. C.—The case in an abridged form had already reached us, and was printed in our last issue. We are always pleased to receive reports of cases presenting features of interest.

THE EXCESS WATER IN BUTTER PROSECUTIONS.

At Manchester, on January 22nd, a prosecution by the Manchester Corporation against Martha Madders, came on for hearing.

Mr. Sutton said there was only one point to which he wished to call the attention of the Court. Under section 24 of the Food and Drugs Act, 1875, it was incumbent upon a person who sold any article of food to prove that whatever extraneous matter it contained had been unavoidably left in it during the course of preparation. The certificate of Mr. Estcourt, the City Analyst, showing that the sample in question contained 21½ per cent. of water, or 6½ per cent. excess water, was put in. Mr. Edgar objected to Mr. Estcourt being called upon to give evidence in the case. We submitted that it was not competent for the prosecution to call him under the Act of Parliament, as it was therein laid down that the Analyst's certificate was sufficient evidence alone. He could be called, however, if the defence wished to cross-examine him. They had no desire to do so in the present instance, and therefore he ought not to give evidence. Mr. Headlam over-ruled the objection, but said he thought the fact that he was called by the prosecution absolved the defendant from paying his costs. Mr. Edgar then objected to the form of the certificate which, as he pointed out, differed materially from the schedule laid down by the Act, and was moreover inaccurate in several particulars, notably with regard to the omission of the date upon which the sample of butter was analysed. The Court over-ruled both objections. Mr. Estcourt was then called. He said he had analysed the butter in question and found it to contain 21.9 per cent. of water. In his opinion, and that of scientific men generally, 15 per cent. of water was an ample percentage for any kind of butter to contain. In answer to Mr. Edgar, the witness said that in exceptional cases he might raise the standard to 16 per cent. He had been of that opinion for twenty years. Any butter containing over 15 per cent. of water he should not consider a genuine butter. In March, 1892, he certified as genuine two samples of butter which were submitted to him for analysis, and which he found to contain respectively 17.50 per cent. and 18.20 per cent. of water. That was, however, because the samples were sent to him privately, and the question he was asked to decide was not the amount of water, but the amount of foreign fat they contained.

Mr. Alfred H. Allen, Public Analyst for Sheffield, coincided with Mr. Estcourt's views that the sample of butter in question was adulterated to the extent he had named. It was only within the last two or three years that the amount of water in Irish butter had increased to such an extent. Before that time the average amount of water ranged from 10 to 14 per cent. He did not believe that in cases where Irish butter contained as much as 21½ per cent. of water that amount could have got in unavoidably. It must have been left in intentionally. In answer to Mr. Edgar, the witness said he was quite unaware that anyone by observation could tell when water had been added fraudulently to butter until he heard Captain Gibson say that he could at the last sitting of the Court. Mr. J. C. Bell, Public Analyst for Salford, gave corroborative evidence. In his opinion any butter containing 20 per cent. of water had had that amount left in purposely.

Mr. James Long, formerly professor of dairy farming at the Royal Agricultural College, and Chairman of the Education Committee of the British Dairy Institute, said he was thoroughly acquainted with the methods of butter-making in all European countries. Speaking from his experience, he should say that the maximum of water in butter should not exceed 15 per cent. Mr. Headlam: For all butters? Witness: Yes, for all butters. Continuing, the witness said there was nothing in Irish butter which distinguished it from other butters, nor was there any reason why it should contain an excessive quantity of water. It was a fact that by treating butter with water which was warmer than the butter, they could cause it to retain a larger percentage of water. He knew that scientifically and by actual experience. The addition of salt to butter ought not to increase the amount of water in the butter. Since the last hearing of the case he had made an experiment. A given quantity of cream was divided equally by weight. One portion was churned at a temperature of 64 degrees, and washed with warm brine at 70, the brine containing 3lb. of salt per gallon. The other portion was churned at a similar temperature, but washed with brine containing only one pound of salt to a gallon of water. The result was that the first sample produced 2lb. 9oz. of butter, and the second 2lb. 7½oz. The samples he sent to Mr. Estcourt for analysis. The butter made with the warm brine was not worked with the object of removing the water, but to keep it in, and thereby to show that by fair manipulation they could not make the butter retain more moisture than was really necessary. In other words, in order to make the butter contain more than 20 per cent. of water artificial means must have been used. Mild-salted butter contained half an ounce of salt to each pound of butter, while what was known as "heavily" salted butter contained three-quarters of an ounce per pound. Any larger proportion than that was of no use in keeping the butter. Butter could not, if it were fairly made, contain 20 per cent. of water. There was very little difference between the butters made in the English creameries and factories and that made in Ireland in similar institutions. In the South of Ireland there was a pickled butter made which could be detected by people of experience. Such butter contained from 10 to 15 per cent. more water than other butter. An excess of water in butter would

have a tendency to hasten decomposition and rancidity. An unusual percentage of salt was often used to cloak the bad flavour of an ill-made butter. He had never himself seen warm brine used in Ireland. Its use was not necessary in the making of butter. It might, however, enable it to retain a larger quantity of water. In reply to Mr. Edgar, the witness said he should not expect to get as good butter for 10d. or 1s. as for 1s. 6d., but the poorer quality need not contain more water. He considered that all butter makers should work up to one standard, no matter what their appliances were. Undoubtedly a high temperature was conducive to a greater amount of water being left in butter, but that difficulty could be overcome by proper methods and appliances. It was the universal opinion of the experts of the world that 15 per cent. of water in butter was quite ample. Danish butter would, in his opinion, although not so heavily salted as Irish butter, keep for two or three months. Mr. Edgar: That is absolutely denied by the trade. Witness: Probably they have their reasons for it. Continuing, the witness said it was quite possible that in order to cater for a certain demand butter was largely salted to suit the taste of the purchasers. Mr. Estcourt, recalled, said the first sample of butter sent to him by Mr. Long contained $8\frac{1}{2}$ per cent. of water, and the second contained $12\frac{1}{2}$ per cent. of water. Mr. T. A. Forrest, Chief Inspector of the Cork Butter Market, said he thought the amount of water in butter should not exceed 16 per cent. In all cases where the butter contained more than 20 per cent. of water the Cork market trustees had instituted proceedings against the maker for adulteration. When hot water was added to butter it absorbed it so readily that a butter which contained 20 per cent. of water might show less sign than one which really only contained 16 per cent. In reply to Mr. Edgar, the witness said that, in consequence of the warm weather in August last, there was a large increase in the quantity of butter sent to the Cork market which was unsaleable owing to the excess of moisture in it. The Rev. Canon Bagot, of Dublin, and a member of a large dairy farming company, said that, as the result of a series of investigations, conducted by him both at home and abroad as one of the Commissioners appointed by the Royal Irish Agricultural Society to inquire into the different methods of making butter, he had come to the conclusion that 15 per cent. was an ample amount of water to be found in any kind of butter. Anything in excess of that amount had been left in by gross carelessness. Sir Charles Cameron, the well-known Irish expert on all matters relating to butter making, said that twenty years ago he found the amount of water in Irish butter to vary from 8 to 12 per cent. The larger proportion of "watered" butters came from the South of Ireland, and was due, in his opinion, to design and not to accident. Out of 79 samples he had received from Ulster not one contained more than 20 per cent. of water. He had analysed "heavily" and "lightly" salted samples of butter which were shown at the Dublin Dairy Show. The former he found to contain 8.2 per cent. of water and the latter 8.8 per cent. of water, showing that the amount of salt in the butter had nothing to do with the amount of water in it. The temperature had very little to do, he thought, with the amount of water in butter. In answer to Mr. Edgar, the witness said he thought the only reason for using brine in the manufacture of butter was that water might be fraudulently added. He was very much opposed to the practice.

Professor Tichborne gave evidence, and Mr. Wm. L. Stokes, butter buyer for the Wholesale Co-operative Society, said he bought for the society last year some 30,000 firkins of this Irish butter. The manager of the King-street Co-operative Society, Oldham, and the Greenacres Co-operative Society, Oldham, deposed to selling this class of butter, the average sale at the King-street Store being 200 firkins per week. Mr. Edgar then addressed the Court in defence, and Mr. Headlam reserved his decision until February 7th.

LAGER BEER ADULTERATION.

In a report to the Staffordshire County Council, Mr. E. W. T. Jones, County Analyst, states that one sample of lager beer was found containing 14 grains per gallon of salicylic acid. Lager beers have had practically no examination for years, and the presence of a powerful drug like salicylic in such a large quantity, seems to show that drinkers of some lager beers are being heavily dosed with dangerous drugs against their knowledge.

A. NICHOLAS, PLYMOUTH.—The question of glucose in jam is having attention, but it will be some weeks yet before we can deal with the results. We do not remember any prosecutions for this article as an adulterant; although it is difficult to say what would be the result of an action.

WHAT THE MILKMAN THINKS OF WATER.

A humorous writer says:—I went over to see Biles, our milkman, the other day, and I found him in the back yard mending his pump. In reply to a jocular remark about his dairy being in a bad way when the pump was out of order, Biles said:

"Oh, I ain't going to deny that we water the milk. I don't mind the joking about it, but all I say is that when people say we do it from mercenary motives they slander the profession. No, sir, when I put water in the milk I do it out of kindness for the people who drink it. I do it because I am philanthropic, because I'm sensitive, and can't bear to see folks suffer.

"Now, s'pose a cow is bilious, or something, and it makes her milk unwholesome; I give it a dash of water, and up it comes to the usual level. Water's the only thing that'll do it. Or, s'pose that cow eats a pison vine in the woods, am I going to let my innocent customers be killed by it for the sake of saving a little labour at the pump? No, sir! I run in a few quarts of water, neutralise the pison, and there she is right as a trivet.

"But you take the best milk that ever was, and it ain't fit for the human stomach as it comes from the cow. It has too much caseine in it. Professor Agazziz says that millions of poor ignorant men and women are murdered every year by loading down weak stomachs with caseine. It sucks up the gastric juice he says, and gets daubed all over the inside until the pores are choked, and the first thing you know is that the man suddenly curls up and dies.

"He says that, out in Asia, where the milkmen are not as conscientious as we are, there are whole cemeteries full of people that have died of caseine, and that before long that country will be one vast burying ground if they don't ameliorate the milk.

"When I think of the responsibility resting on men, is it singular that I look at this pump, and wonder that people don't come and silver-plate it, and put my statue upon it? I tell you, sir, that that humble pump, with the cast-iron handle, is the only thing that stands betwixt you and sudden death.

"And, besides that, you know how flat raw milk tastes—insipid and mean. Now, Professor Agazziz, he says that there is only one thing that will vivify milk and make it luxurious to the palate, and that is water. Give it a few jerks under the pump, and out it comes, sparkling and delicious, like nectar.

"I dunno how it is, but Professor Agazziz says that it undergoes some chemical change, that nothing else will bring it about but a flavouring of fine old pump water. You know that the doctors all water the milk for babies. They know mighty well if they didn't those young ones 'd shrink all up and sorter fade away.

"Nature is the best judge. What makes cows drink so much water? Instinct, sir, instinct. Something whispers to 'em that if they don't sluice in a little water that caseine'd make them giddy and eat 'em up. Now, what's the odds whether I put in the water or the cow does? She's only a poor brute beast, and might often drink too little; but when I go at it I bring the mighty human intellect to bear on the subject: I am guided by reason, and I can water that milk so's it'll have the greatest possible effect.

"Now, there's chalk, I know some people have an idea that it's wrong to fix up your milk with chalk.

"But that's only mere blind bigotry. What is chalk? A substance provided by beneficent Nature for healing the ills of the human body. A cow don't eat chalk because it's not needed by her. Poor, uneducated animal! She can't grasp those higher problems, and she goes on nibbling some grass and other things, and filling her milk with acid, which destroys human membranes and induces colic.

"Then science comes to the rescue. Professor Agazziz tells us that chalk cures acidity. Consequently I get some chalk, stir it in my cans, and save the membranes of my customers without charging them a penny for it—actually give it away, and yet they talk about us milkmen as if they were buccaneers.

"But I don't care. My conscience is clear. I know mighty well that I have a high and holy mission to perform, and I'm going to perform it if they burn me at the stake. What do I care how much this pump costs me, and if chalk is threepence a pound, so long as I know that without it there wouldn't be a membrane in this community; and you'll believe me, that before another century will roll round, a grateful universe will worship the memory of the first milkman who ever had a pump, and doctored his milk with chalk. It will, unless justice is never to have her own."

Then Mr. Biles rigged up his pump, toned up a few cans of milk, corrected the acidity, and went into the house to receipt my bill.

HORLICK'S MALTED For Infants and Invalids.

CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.

OF ALL CHEMISTS AND STORES.

SAMPLE FREE. 39, SNOW HILL, E.C.

A SENSIBLE PENALTY.

At Clerkenwell Police-court on January 26, John Osborne, of Hephall Farm, Etwell, near Derby, was summoned, at the instance of the St. Pancras Vestry, for selling adulterated milk. Two samples were taken from a consignment from the defendant to the Callow Park Dairy Company, and found, when analysed, to be adulterated respectively with 29 and 32 per cent. of added water. The defendant said the adulteration was caused by the bursting, through the frost, of the "cooler." Previous convictions were proved against the defendant, and Mr. Horace Smith now imposed the full penalty of £20, remarking that the case was a very bad one.

CO-OPERATION AND LARD ADULTERATION.

At Wakefield, on January 26th, John Frobisher, manager at the Leeds Industrial Society's branch store at Lofthouse Gate, was summoned for selling lard which, it was alleged, was adulterated. Mr. Malcolm, on behalf of the Co-operative Society, asked for an adjournment as the Society had had the lard analysed, and he believed there would be some contention in regard to it. The merchants who supplied the lard guaranteed it to be pure, and the Society sold the lard as they received it. The case was eventually adjourned.

CHEATING IN SCALES.

At Gloucester City Police-court, on January 24th, John Thomas, pork butcher, of Alvin-street, was charged under the Weights and Measures Act with committing a fraud in using a certain weighing machine, by having three pennies wrapped in brown paper placed under the goods plate of such machine, whereby the balance of the machine was altered to the extent of one ounce against the purchaser. The excuse defendant gave to the Inspector was that trade was bad and the shop did not pay. The Bench characterised the case as a bad one, and said the working men, who were largely defendant's customers, must be protected. They fined him £2 and costs, or a month's imprisonment.

THE LATEST MILK FRAUD DODGE.

Walter Geo. Mant, of Gwynne-road, Battersea, was summoned at Westminster, on January 26th, before Mr. Sheil, by the Chelsea Vestry for selling milk from which 50 per cent. of the cream had been extracted, without giving the purchaser notice of the alteration. Mr. F. Smith prosecuted. Inspector Grant said that after the sample was taken from the defendant—3d. a quart being paid for it—it was found to be a mixture of skimmed and new milk. On defendant's barrow was a notice, in large letters, "The Dairy Farmers' Milk Company (Limited)," and underneath the name of H. Munson, 30, St. John's-hill, Battersea. Mr. Smith: A person we have heard of before in these Courts. I ought to tell the Magistrate what has been done by some of these Dairy Companies since the Home Secretary has intervened. To evade the Adulteration Act they get the carriers to buy their milk and hire their barrows. Mr. Sheil: In what manner has the Home Secretary taken action? Mr. Smith: Mr. Asquith caused a circular letter to be sent round to all the Vestries in London as to the necessity of vigilant action on the part of the Inspectors. Reference was in particular made to one man who, trading in the name of a Company, has been largely fined at nearly every Court in the Metropolis. The defendant said that until recently his master was Mr. Munson. Then all the men were discharged, and told they could sell the milk on their own account. They paid 2s. a barn gallon for new milk, and 1s. 1d. for skimmed, and 1s. 6d. a week for the hire of the "Company's" barrows. All he could earn for himself was 17s. or 18s. a week. Mr. Smith: You will realise the Vestry's difficult position, sir. We have another similar summons pending before your colleague. We have no moral doubt that the defendant in that case was sent out by a dealer to whom the Home Secretary alluded in his circular: but we cannot prove it, because the man will not give information. Mr. Sheil: If I was satisfied these fellows lent themselves to these frauds, I would fine them the full penalty of £10. You say the practice is for these so-called Dairy Companies to send out men of straw. Mr. Smith: That is the latest practice, and the public are cheated wholesale. Defendant (bursting into tears): It is very hard for me to get into trouble like this; I have got no money, and no goods. I only pay three shillings a week for my room, and have had to take the milk out or starve. Mr. Sheil: I will fine you 40s. and the costs, or 14 days. You admit no goods, so you will go to prison forthwith. It will be a lesson to people like you not to cheat poor persons. Mr. Smith said, with the permission of the Court, he would not enforce the sentence of imprisonment till he had reported all the facts to the Vestry. The Magistrate: Very well; if you do not ask for immediate distress, the defendant will remain at liberty for the present.

ONE SHILLING FINE FOR 19 PER CENT. EXCESS WATER.

The Staffordshire Public Analyst, Mr. E. W. T. Jones, reports that "Upon May 31st, Askew, the manager of one of Messrs. Showell's public houses at Bilston, was summoned before two County Magistrates (sitting for the stipendiary), for selling rum at the usual price of the district, which, instead of being diluted to the strength allowed by the Food and Drugs Act, had an additional 19 per cent. of water. Mr. Askew's solicitor's defence was that a notice was up in the bar that the spirits were sold as by the new Excise Regulations, but as there are no Excise Regulations whatever, such a label allowed the defendant to sell spirits any strength. The Magistrates dismissed the case, and with the consent of the Clerk to the Council, I appealed. The Queen's Bench sent the case back to be re-heard, with the order that the Magistrates were to ascertain 'how far it came to the knowledge of the purchaser that he was buying rum with an extra 19 per cent. of water.' This case upon December 2nd was re-heard, and the same Magistrates imposed a penalty of one shilling."

ADULTERATED BUTTERMILK.

At Belfast, on January 23rd, Joseph M'Pherson was summoned by David M'Master, Inspector of Foods and Drugs, for adulterated buttermilk. The sample had been submitted to Professor Hodges, who reported that the milk was adulterated to the extent of 8 parts of water above that allowed by the Act of Parliament. A fine of £3 and costs was imposed.

MORE GROUND GINGER AND PEPPER PROSECUTIONS.

At Birmingham Police-court, on January 26th, Joseph Fellows, 166, Pershore-street, provision dealer, was summoned for selling ground ginger containing 75 per cent. of exhausted ginger, and white pepper containing 10 per cent. of rice starch. Defendant's wife appeared and pleaded ignorance, stating that she retailed the goods in question as they were supplied to her. A fine of 10s. and costs was imposed in each case.

ADULTERATION OF OLIVE OIL.

Olivieri has examined 106 samples of genuine olive oil, finding the amount of potash required for saponification to vary from 19.05 per cent. to 19.50 per cent., and the iodine absorption from 79 per cent. to 83.2 per cent. He tested a number of different oils by oleorefractometer, and is of the opinion that this instrument will be of use to detect considerable adulterations of olive oil. Oils giving normal figures cannot always be passed as genuine without further examination. He relies on the iodine absorption to detect adulterations. Commenting upon these conclusions, one of the staff of the Analyst believes that the maximum iodine absorption given is low, as numerous cases of oils having iodine absorption of 87 per cent. to 88 per cent. have been reported.

ADULTERATED TEA.

In a report just issued by the Arbitration Committee of New York, it is stated that "the Chinese are sending over larger quantities of adulterated tea than ever before." Inspector McGay says:—"I think that they are emboldened to do this by the fact that in recent years 20,000 packages which I had rejected were admitted by arbitration, and shippers in China are consequently disposed to send over as much tea as possible, and take their chances of its being admitted. This is not being done by merchants in this city, who are as anxious as I am that spurious tea shall be kept out of the country, but by the Chinese themselves. I stand between the reputable merchants of this city and the Celestials, who would otherwise flood the market with an adulterated and spurious article."

"Pure Pingsuey, or shotty gunpowder, as it is called, is a very palatable article, but the adulterated stuff that I rejected was composed of exhausted and spurious leaf, rolled into gunpowder pellets and given consistency and weight by a peculiar paste, known as Conges paste. This is made by the Chinese from Sing Poo mud and rice water. To the eye these pellets of so-called tea appear all right, but as soon as they are put in the testing cup the paste loses its adhesive power and the Sing Poo mud comes to the surface, creating a peculiar scum. The pellets are coloured with gypsum, indigo, soap-stone and silicon. The difference in taste between pure Pingsuey and the adulterated article is apparent to the most inexperienced person."

"Some lots of Japan and Amoy teas had been rejected on account of exhausted and spurious leaf and excess of colouring matter, but the quantity of these kinds rejected was not nearly so large as the Pingsuey."

We have packet tea blenders, however, who can improve on the Chinese methods, thanks to the "faking" machine, guaranteed to turn old tea into new.

ADULTERATION OF BEESWAX.

F. Kebler, in a carefully prepared paper, recently read before the Philadelphia College of Pharmacy (printed in Am. Jour. Pharm.), sums up his conclusions from analyses of various samples of beeswax, and other waxes and allied products, by saying that beeswax, in our markets, is adulterated to the extent of 50 per cent. while in English markets it rises to 66-2.3 per cent. The melting point of beeswax, which varies from 62 degrees to 64 degrees C, is raised by carnauba wax, stearic acid, certain mineral waxes, and paraffines, while it is lowered by China wax, Japan wax, cacao butter, resin, tallow, spermaceti, vegetable waxes, and certain stearic acids and paraffines. It is apparently unaltered when adulterated with suint wax and certain mineral waxes, paraffines and stearic acids. The normal specific gravity (0.960 to 0.973) is greatly increased by resin, carnauba wax and certain mineral waxes, and lowered by paraffine. The writer considers the "acid number," "ether number," "iodine absorption figure" and other tests of service in valuation of the samples.

A REMEDY FOR DIPHTHERIA.

Medical science has long sought for a sovereign remedy for the scourge of childhood, diphtheria, yet the coloured people of Louisiana, and perhaps of other localities, have for years known and used a cure which is remarkable for its simplicity. It is nothing more nor less than the pure juice of the pine-apple.

"The remedy is not mine," said a gentleman, when interviewed, "it has been used by negroes in the swamps down South for years. One of my children was down with diphtheria and was in a critical condition. An old coloured man who heard of the case asked if we had tried pine-apple juice. We tried it and the child got well. I have known it tried in hundreds of cases. I have told my friends about it whenever I heard of a case and never knew it to fail. You get a ripe pine-apple, squeeze out the juice, and let the patient swallow it. The juice is of so corrosive a nature that it will cut out diphtheritic mucus, and if you will take the fruit before it is ripe and give the juice to a person whose throat is well it makes the mucous membrane of his throat sore."

CHAMPION & CO., LIMITED., v. THE BIRMINGHAM VINEGAR CO., LIMITED.

APPLICATION TO COMMIT THE EDITOR OF "FOOD AND SANITATION" REFUSED.

In our issue of December 23rd, in an article upon the "Ethics of Honourable Trading," we commented upon what we believed the final determination of the case in which Messrs. Champion & Co., Limited, had sought for an injunction to restrain the Birmingham Vinegar Co., from disseminating to Messrs. Champion's customers or others paragraphs reflecting upon the character of Messrs. Champion's vinegar, alleging that the same was adulterated. We were not aware at the time that there were any further proceedings in this action, and in perfect good faith pointed out how, as the law at present stands regarding injunctions to restrain from the publication of such paragraphs, manufacturers were placed at the mercy of trade rivals.

The Birmingham Vinegar Company, however, upon whom, as regards the libel action which Messrs. Champion have brought against them we shall say nothing, resented so far our comments as to seek by notice of motion to commit the Editor of FOOD AND SANITATION for contempt of Court. The Birmingham Vinegar Company took one month to make up their minds to this course of action, the article in question having appeared in our issue of December 23rd. They had made no complaint that, in their opinion, the article of more than a month ago would have any effect upon the trial in the action for libel—which trial cannot come on for hearing for many weeks yet. Had they had the courtesy to adopt such a course as is usual amongst gentlemen, and pointed out to the Editor that there was an action for libel pending, whatever the Editor's opinions may be as to the Birmingham Vinegar Company, he would immediately, actuated by the absolute fairness that has always been a characteristic of FOOD AND SANITATION, have withdrawn the article from circulation.

But the Birmingham Vinegar Company choose to adopt an entirely different set of tactics. The practice of editor-muzzling, or baiting, is a very fascinating one for some persons, and that was possibly the reason why the company in question sought to induce the High Court to commit the editor to prison for publishing what could only be regarded as a manly, straightforward expression of opinion upon a case which it was believed had been finally disposed of. Mr. Blake Odgers made the application, and in the course of some remarks in answer to interrogatories from the judges, had to admit that the Birmingham Vinegar Company were unable to allege that Champion and Co.'s vinegar was adulterated.

Mr. Justice Mathew in giving judgment commented upon this, and said that he was satisfied that Mr. Henry, against whom the application was made, had acted in good faith in the writing and publishing of the article in question, believing as he did that he was commenting upon a case that had been finally disposed of. He also believed that Mr. Henry had no intention to interfere with the fair progress of any litigation. The article in question was one which might, perhaps, be visited with censure were it written with the knowledge that a case was before the Courts, but he was satisfied as to Mr. Henry's *bona fides*. The Birmingham Vinegar Company in making the application had to face the facts that the article appeared on December 23rd, but they did not call the attention of the editor to it, or to their assertion that it would prejudice the case in the trial for libel until January 25th, and they gave him no opportunity of making any explanation or amends. The application therefore to commit Mr. Henry must be refused without costs.

Mr. Justice Collins said: Assuming that the case was over there was abundant material for comment, and comment of the kind which had been made in this instance, because it did seem a matter for surprise to the lay mind to find there was no means of stopping the publication of such pamphlets before the trial. The point they had then to determine, however, was whether the comments made constituted a contempt of Court. If the defendant really believed the case was over, he was entitled to comment as he chose, subject only to action by the parties referred to. In his judgment this was not a case of contempt, and even if it exceeded the points of fair comment that Court had nothing to do with it. The parties must pay their own costs.

Those who know the vinegars of both firms will be able to understand the action of the Birmingham Vinegar Company in this matter. We refrain from saying anything upon it or upon the Company until the existing action for libel is settled, when in trade interests, we may find it necessary to make public some curious facts respecting this Company, Mr. Tompson, and matters of grave importance to grocers.

JUSTICES' JUSTICE.

At the Neston Petty Sessions, on January 26th, before Messrs. R. Bushell (chairman) and S. H. Banner, John Green, John Waring, Samuel Mealor, John Clarke, and William Johnson, farmers, of Ness, were summoned, at the instance of W. J. Hallard, Inspector of Weights and Measures under the Cheshire County Council, for having in use trade unstamped weighing instruments. Defendants pleaded ignorance of the statute, although the Inspector told the Bench that he saw a notice of his (the Inspector's) intended visit to stamp scales, weights, &c., displayed in one of the defendant's houses, he being a publican also. Another of the defendants had stamped weights and scales in the house for butter weighing, but his potato scales and weights were unstamped. Another's scale was broken and tied up with string. It was also unjust. They were each ordered to pay the costs, 3s. 6d.

From the following case, tried at same Court on the same day, it is a much greater offence for one man to be found trespassing on land than for five men to be wilfully evading an Act, and having unjust balances, &c.:—

TRESPASSING AT GAYTON.—Charles Cunningham and Thomas Cross were charged with trespassing on land belonging to Mr. Johnson Houghton, at Gayton, in search of conies, on the 7th ult. Police-sergeant Hodgkinson deposed to seeing the men in one of Mr. Houghton's game preserves. He searched them, but found nothing in their possession. Defendants were fined 15s. each and costs (7s. 9d.)

MARGARINE AND LARDINE.

At the West Ham Police-court, on January 24th, Philip Glantz, cheesemonger, 97, Victoria Dock-road, was summoned on two informations for selling butter and lard not of the nature, substance, and quality demanded. On December 18th, an assistant named Carey, in the West Ham Sanitary Department, went into defendant's shop and asked for half-a-pound of butter. The lady assistant asked what price he would have, and having told him they had it at 1s. 4d. 1s. 2d. and 1s. 1 lb., Carey asked for that at 1s. and bought half-a-pound which was served from a dish marked "Finest Dorset, 1s." The sample was divided in the usual way, and as to that portion sent to the Public Analyst it was certified to be a mixture of 96 per cent. of margarine. On the same occasion half-a-pound of lard at 8d. the lb., was bought, and this was certified as containing 45 per cent. of vegetable fat, principally cotton seed oil. The defence was that the margarine was sold by a domestic who was momentarily in the shop and she sold it according to the price asked for, while she sold the "lard" as "lardine." Mr. Bagdall imposed a fine of £5 and costs in each case.—William Thomas Smith, a grocer, of 5, Victoria Dock-road, was summoned for selling as butter a substance which on analysis was found to contain 90 per cent. of margarine. The defence was that the shop was being cleaned out, and the margarine label had been carelessly left off the article. He was fined £5 and the costs.

THE MAYBRICK CASE.

BISMUTH POISONING.

It will be remembered that a large proportion of bismuth was found in the Maybrick post-mortem. The following letter from Mr. Norton L. Wilson, M.D., in the *New York Medical Journal* of January 20th, 1894, is interesting:—

POISONING WITH BISMUTH.

Elizabeth, N. J., January 5th, 1894.

To the Editor of the *New York Medical Journal*.

SIR,—In reading the extract from the *Lancet* in your issue of December 30th, 1893, on bismuth as a local application in burns, my mind went back to a case of bismuth poisoning which came under the notice of our hospital staff during the month of June, 1892. Thinking it may be of value to the profession to record such a case, I take the following from the records of the Elizabeth General Hospital: A German girl, fifteen years old, single, brunette, and of a nervous temperament, received a burn of the third degree, covering an area of sixteen by fifteen inches, on her back. This occurred on April 16th. She was admitted into the hospital on June 2nd. From the time of the accident until her admission she had been treated by a physician, and we know little or nothing of the treatment. Upon her arrival she was anesthetized with ether and the burned surface scraped and cleansed with a 1-to-3,000 bichloride of mercury solution and dressed with bismuth subnitrate (Squibb's); over this were placed muslin, cotton, and a bandage.

The patient was placed upon the use of a milk diet and the wound dressed every second day. This treatment was continued until June 10th, when the dressing was discontinued, the following signs and symptoms having been discovered: A black line along the margin of the gums, involving those of both the upper and the lower jaws; headache, nausea, vomiting, paleness of countenance, a urinous odour of the breath, elevated temperature, increased rapidity of the pulse, and increased frequency of micturition. The urine was light in colour, having a specific gravity of 1.012, and acid in reaction, and contained a small amount of albumin.

Edema and pain of the lower extremities and some cutaneous irritation of the upper limbs, with a marked diarrhoea, existed and continued until her death, which occurred on the 18th of June.

The literature on this subject seems to be meagre, but I feel convinced, as do also my co-workers, that this was a genuine case of bismuth poisoning. The bismuth was tested for lead and arsenic, and both were found to be absent.

NORTON L. WILSON, M.D.

FRAUDULENT BUTTER IN THE CORK MARKET.

CORRESPONDENCE.

THE RECENT BUTTER PROSECUTIONS AT MANCHESTER.

To the EDITOR of FOOD AND SANITATION.

SIR,—As I held the post of Public Analyst for the City of Cork during the years 1883-1889, I claim to have some little knowledge of the composition of butter as made in the South of Ireland, and it is with considerable surprise that I have read some portions of the evidence given in the recent trial.

During the six years I lived in Cork, I examined a large number of samples of butter, including those officially purchased under the provisions of the Sale of Food and Drugs Act, others sent by private clients, and a number purchased by myself for the purpose of ascertaining the average composition of Irish butter as retailed to the public. As the result of a large number of analyses, I found that the average percentage of water in genuine fresh butter was from 12 to 13 per cent., in the mild cured, and salt butter the average was a little higher, 14.5 to 15.5 per cent., and it was only in some few cases that it reached 16 per cent. or over, and when this happened with samples officially purchased, the vendors were prosecuted.

After the rise of the creamery movement, a distinct improvement was noticed not only as regards the smaller proportion of water, but also in the general appearance and quality of the butter, and as one who was anxious for the prosperity of the sister isle, I had hoped this improvement had continued and extended, the recent trial shows that such is not the case.

During the period I speak of, the trustees of the Cork Butter Market were endeavouring to stop the practice of watering butter, and a number of samples were forfeited by them, and proceedings taken against the vendors. I enclose an account of two of these cases, as I think they are of interest when compared with the report of the recent trial.

Yours &c.,

B. A. BURRELL, F.I.C.,

Late Public Analyst for the City of Cork.

5 Mount Preston, Leeds.

PROSECUTION BY THE TRUSTEES.

Reprint from *Cork Examiner*, June 20th, 1885.

At the Police Office yesterday, before Mr. Mitchell, R.M., a Mr. John Hanrahan, Mitchelstown, appeared in answer to another summons at the suit of the Trustees. Mr. Julian said this prosecution was brought under the 19th bye-law, which provides that anyone bringing butter to the market containing too much water, or those mixed with any adulterated substance, shall forfeit a sum not exceeding £10. The particular offence with which the defendant was charged, was that of having an undue quantity of water in the butter in a firkin of butter which he sent to the market on the 20th May. The butter in question was submitted to an Analyst, and was found to contain 21 per cent. of water. He (Mr. Julian) was instructed to state that this was a very serious offence, and that this offence of having too much water in the butter had done more to injure the reputation of Cork butter than anything else. Mr. Julian spoke at some length on the consequences that would ensue as far as the market was concerned if these things were allowed to continue. Mr. Forrest, Inspector at the market, in reply to Mr. Julian, said he examined the firkin in question, and found it to contain a large percentage of water. He should say there was about a gallon of water in it. To Mr. Healy: The habit of watering butter has existed throughout Munster. The water in this particular butter would give an increase about 8 lbs. at about 8d. the lb. The quality would be deteriorated, but the purchaser might not discover the fact. Mr. Harrington, Analyst, stated in reply to Mr. Julian that he found the butter to contain 21 per cent. of water and 5.6 per cent. of salt. In good butter the water ought not to exceed 12 per cent. Too much water has a very injurious effect on the quality of the butter. Mr. Mitchell: Is 21 per cent. out of all proportion? Witness: It is excessive; too much entirely. Mr. Mitchell: Could 21 per cent. be in the butter without being an improper quantity. Witness: Certainly not. Some other witnesses were examined, but their evidence disclosed no new facts. Mr. Healy contended that the difference between the admissible 15 per cent. of water and the 21 per cent. found in the butter, was of such small value as to make the idea of intended fraud an absurd one. He contended that the consignor had no knowledge of the real percentage of water, and no intention of fraud. Mr. Julian said that in this case the trustees pressed for a severe penalty. Mr. Mitchell said that the prosecution instituted by

the trustees was a very important and very necessary one. He (Mr. Mitchell) would be failing in his duty if he did not give the trustees every assistance in upholding the laws made for the improvement of the Butter Market. He asked the Analyst was the water in this butter out of all proportion, and he said it was. In this case he should impose a penalty of £4, and order the forfeiture of the butter.

Reprint from *Cork Examiner*, September 16th, 1887.

BUTTER-MARKET PROSECUTION.

Richard Wolfe, farmer, Newcastle West, County Limerick, was prosecuted by the Trustees of the Cork Butter Market for sending three firkins of butter which contained an undue quantity of water to the Cork market. Mr. H. B. Julian, solicitor, who appeared to prosecute on behalf of the Trustees, said that defendant was summoned under the 9th Bye-law, by which any person who bought or sent to the market for inspection or sale any butter fraudulently prepared or made, or which contained an undue quantity of water was liable to a penalty not exceeding £10 for each firkin so sent. In that case four firkins had been sent—one contained what was, in his opinion, an undue quantity of water but which they did not think great enough to institute a prosecution for. The other three firkins were those for which the prosecution was instituted, and on analysis they were found to contain, the first, 20.5 per cent., the second 25 per cent., and the third 24 per cent. of water. They had before obtained a conviction for butter containing 20 per cent. of water. Mr. Thomas A. Forrest, Head Inspector at the Butter Market, said that the Inspector who inspected these firkins called his attention to them; he then inspected them, and came to the conclusion that they contained an undue quantity of water. His opinion agreed with that of the other inspectors. He then sent samples from each to be analysed. He believed the excessive quantity was water which had been added at a high temperature. In his opinion 15, or at most, 16 per cent. would be the maximum for fairly made butter. Mr. Harrington said he had analysed the butter. The first butter contained 20.5 per cent., a very undue quantity of water, and the other samples 25 and 24 per cent. respectively, which were excessive quantities of water. Proper butter should not contain more than 15 or 16 per cent. of water. Mary Sullivan was then examined for the defendant. She said she made the butter entirely herself. It was very hot and soft, on account of the weather, and she could not get the butter-milk out; she washed it several times with pickle and hot water, but got it out again. She did not allow any of the water put in this way to remain. Mr. J. Fitzgerald, butter merchant, said that the relations of last witness had been sending in butter for the past forty years to his firm, and nothing wrong was ever detected in it. Mr. Young said they should protect the reputation of the market, and they would fine the prisoner 10s. for each firkin sent, with 10s. costs, and order the butter to be forfeited.

DISTRIBUTING FEVER AND FISH.

At the instance of the Vestry of St. Mary, Battersea, Joseph William Cox, a young man, was summoned for unlawfully engaging in occupation at a fish shop in Battersea Park-road while suffering from scarlet fever. Mr. W. W. Young, who supported the summons, described the offence as a most serious one, having regard to the danger of infection. He proceeded to explain the facts, from which it appeared that on October 16th last Cox was informed by Dr. Harley, of Victoria-road, that he was suffering from scarlet fever. The Vestry having been informed by the doctor that there was sufficient isolation on the premises did not take the necessary steps to have him removed to the hospital, but served a notice requiring the use of disinfectants and isolation. The premises were watched by Mr. Isaac Young, the Chief Sanitary Inspector, and he saw Cox serve as many as fifty persons with fish, in addition to obtaining more from the cellar. Cox was at this time peeling, the most dangerous stage of the disease. Evidence having been given to prove these facts, Mr. Hanne, on behalf of the defendant, pleaded ignorance and a want of knowledge. Mr. Denman agreed with Mr. Young as to the serious character of the offence, and fined Cox a penalty of £3.

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CARBON DIOXIDE IN RELATION TO VENTILATION.

In a paper on the value of carbon dioxide as a measure of the efficiency of ventilation appearing in the journal of the American Chemical Society, E. H. Richards points out that many people live and apparently thrive among the most nauseous odours, while under more favourable conditions they sicken and die. One theorist has given a reason only to be forced to the wall by another quite as plausible. Between them the advocate of pure air finds slight hearing. It is only within recent years that a knowledge of the significant fact that not to air itself nor even to the bad odours it carries, but to the dust particles bearing living germs and spores is to be attributed the spread of disease, therefore filtered air, like filtered water, has become a necessity where dust cannot be avoided by scrupulous care.

And now with our increased knowledge of the causes which lead to liability to disease, it seems probable that the chemist and sanitarian may at last unite in a winning fight for pure air. In a word, the new standpoint relates to the *resistance* which healthy blood and tissue present to the attacks of disease. This resistance is, we believe, due to the perfect nutrition of the blood corpuscles, and this is largely dependent on the inhalation of air containing sufficient oxygen.

In vitiated air the blood becomes quickly loaded with imperfectly oxidized products which cause derangement more or less serious, and finally render the individual, who is poisoned from within rather than from without, more liable to succumb to disease.

If this view is in any measure correct it is important that chemists combine to urge upon the community the importance of a sufficient supply of air, especially in schoolrooms, and it is to be hoped that these views will command more respect than heretofore. It is notorious that even college halls and fine public buildings, which should be examples, are, in fact, the worst of any buildings.

The Laboratory of Sanitary Chemistry at the Massachusetts Institute of Technology has had for the past nine years exceptional opportunities for the study of the relation of the amount of carbon dioxide to the efficiency of the ventilation, in that the Walker building is supplied with mechanical ventilation under the direction of an expert, and in full control of the engineer, who has records for all these years of the amount and temperature of air supplied to each room, and of the temperature of these rooms taken four times each day.

During these nine years some 5,000 determinations of the amount of carbon dioxide have been made in these rooms by some 200 students.

Many problems have been studied and several reports published without burdening the reader with details, to state a few of the conclusions reached, may stimulate others to add to our too meagre knowledge on this subject.

The outside air of the space around the Massachusetts Institute of Technology, Boston, varies from 3.7 to 4.2 parts carbon dioxide per 10,000.

The deterioration of the air as shown in the empty rooms is about 0.5 part, due to the decomposition of the organic matter present in the flues, the floors, and in the walls.

The air of the building in general, halls and drawing-rooms, reading-rooms, etc., which are open, and in which people are constantly moving, is maintained at about 5.0 parts as an average of examinations during eight years. In the ninth year there has been an increase due to an increased number of lecture-rooms on the second floor.

The air of most of the lecture-rooms has contained from six to eight parts; of the larger crowded halls for 200 or more students, ten to twelve parts according to weather, whether it is clear and dry and with a strong wind, or whether the air is loaded with moisture, and is still.

From this experience it would seem that students can work well in a clean room with about seven parts per 10,000 of carbon dioxide; much more than this causes dullness, and anything over thirteen parts causes in most cases an almost impassable barrier to the full acquisition of knowledge.

When churches, halls, and lecture-rooms usually show from fourteen to eighteen parts per 10,000 in twenty minutes after the audience assembles, it is not strange that eloquence often fails to arouse enthusiasm.

The Public Health Committee of Clerkenwell have decided that in future a book be kept at the Vestry Hall, in which the Inspectors under the Sale of Food and Drugs Act, are to note the shops from which they take samples. The object of this is that a more systematic taking of samples shall be adopted. Of twenty-seven samples taken during the past quarter in the parish, seven out of the eleven samples of milk were found to be adulterated; seven out of thirteen of butter adulterated; and three of mustard, one of pepper, and one of margarine.

HITHERTO, in many of the districts of Worcestershire, the duties of Inspectors of Weights and Measures, and also in some instances those of Inspectors under the Sale of Food and Drugs Act, have been performed by the police. It has been decided by the Board of Trade and the county authorities that the duties shall be performed by specially qualified persons. On Tuesday, at Haslemere, Inspector Ball, who has recently been appointed, instituted proceedings against several traders for offences, and the magistrates imposed small penalties.

THE Bedfordshire County Council have decided to put into force in the county the provisions of the Food and Drugs Act. A police-sergeant will act as Inspector under the Act.

ANALYTICAL LOGROLLING.

THE FERTILISER'S APPOINTMENTS.

Macaulay's brilliant illustration of the methods by which an honest Brahmin was deluded into the belief that the sacred sheep was an unclean pig, is peculiarly *appropos* at the present moment. A ring of three Analysts, who evidently understand the logrolling methods by which Smiffkins puffs Tiffkins, who in his turn puffs Smiffkins, are busy endeavouring to convince County Councils that they alone understand the analysis of fertilisers and feeding stuffs, and by methods which, to say the least, are somewhat unprofessional, are insinuating by mutual innuendos that some of the most capable Public Analysts of the country are unfitted for positions under the Fertilisers and Feeding Stuffs Acts, to the end that the triumvirate may secure all the appointments themselves. We confess to a feeling of some disgust at practices of this character, the more so as the artful innuendos have not a shadow of foundation or excuse. We are not amongst those who believe that Public Analysts of repute and known qualifications are not capable of determining the amount of phosphoric acid or nitrogen in a sample of manure, or of distinguishing cotton seed from linseed in oilcake. It is ridiculous and absurd to allege, as is being freely alleged, that there are only three Analysts in England who can do this. We have a recollection of some similar statement on the part of three immortal tailors of Tooley-street. County Councils and the Board of Agriculture should be able to see that a food analyst, who is competent to analyse not only the hundreds of articles of food and drink, but every article included in the British Pharmacopœia must of necessity be competent to analyse and report upon the simple and comparatively few articles that will be submitted under the Fertilisers' Act. If it were contended that a public Analyst taking an appointment under the Fertilisers' Act must of necessity be competent to instruct the farmer upon farming processes, such as growing of turnips and feeding pigs, then we are bound to say that such a contention is ridiculous, as the District Analyst's functions are distinctly limited by the Act to the analyses of such samples as are submitted to him. There is a great deal of nonsense being talked, and of pressure being brought to bear upon County Councils and the Board of Agriculture by the logrolling triumvirate to lead County Councils to put unmerited slights upon their own Public Analysts, and give these appointments to outsiders. It is, therefore, as well that County Councils should be informed of the real facts of the case. There is not only no advantage in giving the post of Analyst under the Fertilisers and Feeding Stuffs Act to outside applicants; but there is a positive disadvantage as apart from the fact that an injurious insult is offered to a tried and trusted officer acquainted with the working of public official analysis, the existence of two analysts concerned with adulteration working for one local authority must lead to confusion and be detrimental to the public interest. The working of the Food and Drugs Act affords many instances of the truth of this view.

METHYLATED SPIRIT—A CAUTION.—A correspondent writing to the *Pharmaceutical Journal* says:—"The evidence adduced at a recent coroner's inquest upon the unfortunate victim of a snapdragon accident induced me to infer that methylated spirit as now made with mineral naphtha (in accordance with the general order of the Board of Inland Revenue, July 20, 1891) might give off naphtha vapour at ordinary temperatures, which, mixing with the confined air contained in a vessel only partially filled with the methylated spirit, produced a dangerous explosive mixture; that this inference is correct I have confirmed by experiment, and desire to indicate to brethren in the trade, and through them to purchasers of the spirit, this latent source of danger, as it requires more care than is often bestowed to avoid the proximity of flame to the open mouth of any such containing vessel."

COLEMAN'S "WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

Sole Manufacturers:

COLEMAN & CO., Limited, NORWICH and LONDON.

A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps.

CHECKING MILK ADULTERATION AT LEEDS.

At the Leeds Town Hall, on January 7th, Joseph Cousins, White Gate Farm, Bramley, was charged with selling a pint of milk which the City Analyst has certified to contain 16 per cent. of added water. Mr. Walker, Food Inspector for Leeds, stated that on the 18th of December last he saw the defendant in West-street, delivering milk. He bought a pint of the milk. After the City Analyst had given his report, witness saw prisoner at his house, and he then stated that he had been away that day and had just arrived home in time to go down to Leeds with the milk. The cows had been milked by one of his men, who stated that when he milked the cows he rinsed the cans out with water and emptied all into a large can. He did this because the quantity was short. Prisoner was fined 40s. and costs.

HOW CONFECTIONERY IS MADE.

At Marylebone, on January 12th, Edmund William Linton, a confectioner, of London-street, Paddington, was summoned for having in his possession eggs unfit for the food of man. John Biorn, a Sanitary Inspector for Paddington, visited the defendant's bakehouse, and found two pint pots nearly full of broken eggs ready for mixing. The eggs smelt bad, and when Biorn asked what was going to be done with them, either the defendant or his man answered they were going to use them for mixing. Biorn seized them, and, on looking round the bakehouse, saw two other bad eggs and some shells, of which he also took possession. They were condemned by the Magistrate, Mr. Cooke. The eggs would have been used in the making of Bath buns and sponge cakes. The Magistrate fined the defendant £4, with the costs, or seven days' imprisonment.

DUTCH BUTTER WITH 20 PER CENT. MARGARINE.

At the Edmonton Petty Sessions, on January 18th, George Bragg, of Church-road, Tottenham, was summoned at the instance of Mr. Tomlin, the County Inspector, under the Food and Drugs Act, for having sold as butter a substance which was found on analysis to be adulterated with 20 per cent. of foreign fat. Evidence of purchase having been given, and the County Analyst's certificate having been handed to the Magistrates, Bragg, in defence, said he sold the butter in the same condition as it was in when he received it from wholesale dealers. Chas. Fisher, a representative of Messrs. Murley Bros., of Brushfield-street, informed the Bench that his firm sold the material to the defendant in the condition in which it was received by them from Holland. An application was made that the sample might be submitted to the Analysts at Somerset House, and the further hearing of the case was adjourned in order that this might be done.

ANOTHER VICTIM OF PROFESSOR ABEL'S FLASH-POINT FOR OILS.

At Kidderminster Margaret Johnson, fifty-four, housekeeper to Mr. Williams, saddler, Wellington, was carrying a paraffin lamp upstairs, when it burst. She threw it down the stairs, but, becoming excited, lost her footing and fell into the flames, and was burnt to death.

There is a very heavy total of terrible deaths already recorded against Professor Abel's flash-point for mineral oils, and it is time that considerations of public safety caused the standard to be raised to a safe figure. In London, in 1890, out of 2,555 fires, no less than 271 were due to lamp explosions, and fifteen deaths were caused by lamp accidents. The enormous loss of life and property is a heavy price to pay for the unsafe flash-point of the "cordite" Professor.

£7 2s. FOR A CLERICAL ERROR.

An important summons under the Adulteration of Foods Act, &c., was determined by Mr. Sheil, the Chelsea Vestry being the complainants against Mr. Daniel Hall, who has taken over the business of the Union Dairy Company, Limited, Liverpool-road. It appeared that a sample of milk sent out from the Vauxhall-bridge branch on the morning of Jan. 2nd was analysed by Dr. Parkes, the Public Analyst for Chelsea, and was found deficient in cream to the extent of at least 16 per cent. Mr. Moore (Messrs. Ricketts and Co.) gave notice of the special defence of warranty, and showed by evidence that the churns of milk from which the sample was taken were sent by rail to London on the morning in question from Mr. S. Wade, a farmer, of Radbourne, Derbyshire. On one only of the three churns was a label purporting to be signed by Mr. Wade as endorsement of the printed statement thereon, "Warranted pure new and unskimmed milk." By a clerical error the date was given as Jan. 1st, 1893, instead of 1894, and the question before the Court was whether such a notice was a sufficient protection to the vendor of the milk.—Mr. Sheil said he should hold that it was not, and imposed a fine of £5 and £2 2s. costs.

STARCH AND MUSTARD.

Ann Bicknell, shopkeeper, Hampton Wick, was summoned at Teddington for selling as mustard, an article containing 50 per cent. of starch, on December 20th, 1893. Walter Tyler, Inspector under the Food and Drugs Act, and Edward Watkins, his assistant, deposed to purchasing a quarter-of-pound of mustard from the defendant on the day named, which she took from a large tin. They informed defendant that the mustard had been purchased for the purpose of being analysed and, dividing it into three parts, subsequently submitted one of them to the Public Analyst, who certified that the article contained 50 per cent. of starch. Defendant said she had had the mustard two years, but scarcely ever sold any from the tin, generally selling by small penny tins. She had no idea that the mustard was not pure. Fined 20s. including costs. The Bench remarked that defendant had her remedy against those who sold the article to her.

Mr. Chas. H. Southwell, Ph.C., F.R.M.S., Public Analyst for the administrative county of the parts of Holland Linns has been appointed District Agricultural Analyst under the Fertilisers and Feeding Stuffs Act for the same county division.

A WARNING TO DAIRYMEN.

At Barnsley, John William Houghton, milk hawker, of Copper-street, was charged that he, on the 17th January, at Barnsley, did steal, take, and carry away nine pints of milk, value 1s. 6d., the property of the Farmers' and Cleveland Dairies Company (Limited). Prisoner pleaded not guilty of theft, but said he was guilty of adulteration. Mr. J. Carrington prosecuted; prisoner was undefended. Mr. Carrington said the proceedings were of twofold importance. They were important to the company, who employed 400 men as milk-sellers, and last year turned over two and a half million gallons of milk, and they were important to the purchasing public, because the company took every precaution to see that a good article was supplied. Prisoner for some time past up to the 17th inst. was a milk seller in the company's employ. Prior to that date there had been grave suspicion that the prisoner was adulterating the milk served out to him for sale, analysis of the milk returned by him showing this clearly. The adulteration increased, and a trap was set for the prisoner. Mr. Stableforth, of Newcastle the company's manager, came to Barnsley and consulted with Detective-Sergeant Parker. On the 17th ult. 15 gallons of milk were handed to the prisoner after samples of it had been taken. Prisoner went on his round, and was followed as far as Albert-street. He had two cans, as usual—a barrow can and a hand can. The barrow can was left in New-street, and prisoner went down Albert-street selling from the hand can. When he returned to the barrow Mr. Waterton, Inspector under the Food and Drugs Act, purchased a sample of the milk from the prisoner; and Sergt Parker came up and asked for a pint of milk from the hand can. Prisoner wished to take it from the barrow can, but the sergeant insisted on having it from the hand can, and was supplied with it from there. Mr. Stableforth then came up, and, after seeing prisoner serve five or six more customers, asked prisoner to return to the dairy. On the way prisoner said to Mr. Stableforth, "I may as well make a clean breast of it. I see there has been a trap laid for me, and I have been caught red-handed this morning. I would not have cared if I had got the stuff mixed. The milk was taken to the dairy and samples taken to Mr. A. H. Allen, the Public Analyst, of Sheffield. That gentleman's report stated that the sample No. 1 taken before the milk left the dairy was pure milk of fair quality; sample No. 2, that purchased from prisoner's hand can by Sergeant Parker, contained 38 parts of milk to 62 of water; and No. 3 sample, taken from the bulk of milk returned by prisoner to the dairy, contained 84 parts of milk to 16 parts of water. The charge of theft was arrived at in this way. 15 gallons of milk were served out to the prisoner. He returned to the dairy nine gallons of liquid, accounting for six gallons of milk sold. The nine gallons remaining contained according to the analysis 1½ gallons of water, which was equivalent to nine pints of water put amongst the milk. He was therefore charged with stealing the nine pints of milk. The statement was fully borne out by Mr. Stableforth. Detective Sergeant Parker, Mr. Hyslop, the Company's manager at Barnsley, Mr. G. E. S. Smith, assistant to Mr. Allen, and by Mr. Allen himself, who said that one sample contained water at the rate of three gallons of water to two gallons of milk. Prisoner said he only sold milk to the public from the mixture in the hand can. The Bench said the charge was clearly proved. In addition to the theft prisoner had laid the company open to a heavy penalty for adulteration. He would be fined 40s. and the costs, which together amounted to £7 3s.

CONFECTIONERS' EGGS.

A man applied at Thames Police-court on January 30th for a summons for assault against a man of whom he had bought 1,500 eggs for 5s. Finding the eggs were all rotten he took them back, but the man refused to return the money, and broke all the eggs except 600. The stench in the shop, said the applicant, was something fearful. Mr. Mead: Did you examine the eggs before you bought them? Applicant: No, sir; he would not let me. Mr. Mead: Well, did not that prove to you that the eggs were bad? Applicant: They are what we call spots, half good and half bad. What do you do with these eggs? Applicant: I sell them to confectioners. Mr. Mead: And do they use them in that condition? Applicant: Yes. The 600 eggs that were not broken I took to the Vestry and had condemned. Mr. Mead. I can do nothing in that matter; you had no business to buy bad eggs. As you say he assaulted you when you went to his shop, you have a summons. Since the Vestry have been apprised of the condition of these eggs I trust they will summon you, or if not you, I hope they will summon the other man.

DEFECTIVE SUMMONS.

George Garrett, grocer, St. John's-road, was summoned for selling adulterated butter. Mr. E. J. T. Webb defended. Superintendent George Hinks deposed to visiting the defendant's shop in St. John's-road on the 27th December. He asked for three-quarters of a pound of shilling butter. Defendant replied he had none at that price, nothing less than 1s. 2d. per lb. He had some of this. Dividing it into three parts, he told Mr. Garrett he was going to send a portion to the Public Analyst. He replied, "Yes, I thought so." The Public Analyst's report stated that the sample submitted consisted of 33 per cent. of butter, and 67 per cent. of margarine. In reply to Mr. Webb, Superintendent Hinks admitted that a second summons was issued, as the first was informal. Mr. Webb argued that the defendant was entitled to a dismissal, as the proceedings were irregular. The first summons was bad, as it did not allow of the statutory time, seven days, expiring, while the second summons, issued three days later, was given under the same date as the first one, the 10th January. The Bench considered the objection fatal, and dismissed the case.

TESTED FOR PURITY, NON-SHRINKING, AND STRENGTH.

Protection from Chill in all Climates.

TRADE MARK.



JAEGER Pure Wool CLOTHING.

The Best is the Cheapest!
Fixed, moderate prices for first quality.

The "JAEGER" Goods are tested for Purity in the Company's own Laboratory and Guaranteed by this Trade Mark, without which none are genuine.

Dr. Jaeger's "Health Culture," and
Jaeger Coy.'s Price List, sent free.

WEST-END JAEGER DEPOTS:

8 & 4, PRINCES STREET, CAVENDISH SQUARE (near Regent Circus).
 126, REGENT STREET (near the Quadrant).
 80, SLOANE STREET (adjoining McPherson's Gymnasium).
 456, STRAND (near Trafalgar Square).

CITY JAEGER DEPOTS:

85 and 86, CHEAPSIDE (near King Street).
 158, FENCHURCH STREET (near Lime Street).
 TAILORING, 42, Conduit Street, Regent Street, W.

PURE YEAST *Trade* **NG & SF** *Mark* PURE YEAST

Use 4 ozs. to 280 lbs. Flour, second turn in winter.

For doughing direct, and other methods of working, address—

W. HEPWORTH, Harwich, Essex.

Most powerful Yeast known.

SUPERIOR FLAVOUR. LONGEST KEEPING.

Highest Awards, Healtheries, London, 1884.

LONDON, 1893 (last Year).

LARGEST YEAST WORKS IN THE WORLD.

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands, Neuralgia, and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol Cyprus: "I have never found any thing to come up to it for neuralgia and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

TRUE RECIPROCITY!

OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

'SILVER VEIL,'

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labor.

Why support the product of a country which brags of McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDENS' FACTORIES, LIVERPOOL.

"FOOD & SANITATION" has over 50,000 Readers: Medical Practitioners, Sanitary Inspectors, Food and Drugs Acts Inspectors, Wholesale and Retail Grocers, Weights and Measures Inspectors, Town Clerks, Solicitors concerned with the Food and Drugs and Public Health Acts, Surveyors, Medical Officers of Health, and the General Public.

Official Advertisements.

DERBYSHIRE COUNTY COUNCIL.

COUNTY ANALYST.

THE WEIGHTS AND MEASURES COMMITTEE of the Derbyshire County Council is prepared to receive applications from duly qualified persons for the appointment of COUNTY ANALYST for the Administrative County of Derby (exclusive of the Boroughs of Chesterfield and Glossop), under the Food and Drugs Act, 1875, and for the whole of the Administrative County, under the Fertilizers and Feeding Stuffs Act 1893, etc. Salary £350 per annum, together with necessary railway fares, cab hire, and postage. The person appointed will have to devote his whole time to the service of the Council, but will not be eligible for a pension, and the appointment is to be determinable by six months notice on either side. Office and laboratory will be provided by the Council. Applicants must be between the ages of 25 and 50 years, and must be prepared to commence duties as soon as required by the committee.

The appointment will be subject to the approval of the Local Government Board, and also of the Board of Agriculture. Statement of duties and forms of application may now be obtained from, and all applications, with copies of testimonials (not exceeding three in number) must be sent to me, the undersigned, before the 14th day of February, 1894. Personal canvassing will disqualify.

N. J. HUGHES-HALLETT,

Deputy Clerk to the County Council for Derbyshire.

40, St. Mary's Gate, Derby, 25th January, 1894.

COUNTY OF DURHAM.

THE COUNTY COUNCIL of DURHAM desires to appoint a DISTRICT AGRICULTURAL ANALYST, under the Fertilisers and Feeding Stuffs Act, 1893. The remuneration will be a retaining fee of £10 10s. 0d. per annum, with 10s. 6d. per sample analysed in addition. Applicants must be legally qualified Analysts. Personal canvassing is prohibited and may disqualify.

The person appointed will be required to commence work without delay, and to reside in the County of Durham. The appointment will be held subject to three months' notice on either side, and there will be no superannuation allowance or pension.

Applications, accompanied by not more than three testimonials, to be sent, not later than 13th February instant, to the undersigned, from whom printed forms (to be filled up in the candidate's own handwriting) can be obtained.

RALPH SIMEY, Clerk of the County Council.

Exchequer-buildings, Durham.

Food and Sanitation.

SATURDAY, FEBRUARY 10, 1894.

POINTS FOR WINE AND SPIRIT TRADERS.

In our crusade against the swindles of vending as whisky a fluid which, as Dr. John T. Woodside described it in our issue of December 30th, should be sold labelled as follows:—

"This choice blend is sold as a mixture containing a very small amount of honest whisky, mixed with a large quantity of 'patent still' spirits, derived in this country from yellow Indian corn. It is freely adulterated with highly rectified German potato spirit, manufactured abroad by distillation from bad potatoes, spoiled fruit, decaying grass seed, and a variety of other nondescript articles. It is exceeding mellow, being now 14 month's old, and has been highly recommended by connoisseurs and the medical profession."

We have not unnaturally aroused the hostility of that class of journals, who live by puffing any trash that will

afford them a few pages of advertisements Dr. John Woodside gave a charming illustration of what spirit is to-day.

"Not long ago a cargo of dates consigned to Belfast were found on their arrival damaged by water and fermenting. The merchant, unwilling to sustain so great a loss, picked out all the stones and washed them, the dates he sent to a distiller, who bought them to make whisky with at half their selling price; this cleared the freight and cost, then the profit came on the stones. These were taken to the mill, dried and roasted and ground, and exported to France to mix with French coffee, which they send back here for the use of English consumers.

"A vile kind of rubbish called foreign patent spirit is imported into these countries 'made in Germany,' from anything and everything under the sun. It is used in large quantities by the blenders, because they get it cheap."

From examinations we have made of the principal whiskies now offered to the public, our own results corroborated those of Dr. John T. Woodside in his striking and useful article upon this important subject. We notice, however, that one of the worst of the trade journals, *Ridley's Wine and Spirit Trade Circular*, takes exception in the grossest and most ignorant terms, to the results of our examinations of whiskies and other classes of spirit, notably Holland's gin, but as usual with trade journals it does not know anything scientifically of what it is writing about. Just as King George had so often told that lie about being present at the battle of Waterloo that he actually came to believe he had been there, and even boasted of his exhibition of courage there to the Duke of Wellington, who was too polite to contradict His Majesty, so some trade journals have become so accustomed to posing as authorities upon the purity and quality of spirits that they have actually deceived themselves into the belief that they know something about the question, when in truth they are entirely ignorant of the subject from a scientific point of view, and from a trade one their readiness to puff any trash for the sake of advertisements is notorious.

A few months ago, during our inquiries into the margarine question in Holland we took occasion to examine Hollands gin as drunk in Holland, extending our investigations into it as distilled, as flavoured for the English market, the American market, and the Cape. In our issue of Dec. 16th we gave some of the results to our readers as follows:

"HOLLANDS GIN.

"The reason why this spirit has not advanced more rapidly into public favour has been in a great degree owing to the fact that really high-class Geneva has, until recently, not been obtainable. The spirit commonly sold as Hollands gin in England is of a kind which a Dutchman would regard as an interesting curiosity, but would decline to run the experiment of drinking. It is becoming increasingly difficult to secure a pure spirit. If we take, as an example, whisky, we find that the enormous increase in the sale of this spirit during the past few years has led to the flooding of the market with so many blends of malt grain and potato spirit, that the whisky drinker is bewildered. If he be not wise enough to strictly confine himself to what is guaranteed to be a genuine article, such as John Jameson's and Old Bushmill's in Irish whiskies, or Lennox's pure malt whisky in Scotch whiskies, he pays the penalty of his trustfulness by headache and nausea. But high-class whiskies afford the owner of a number of 'tied houses,' or the individual publican, far less profit than the 'faked' ones, and it is usually only in the best hotels that genuine whisky is to be bought retailed, the ordinary public-house being the medium by which the blends of malt, grain and potato spirit are disposed of. Slowly, but yet perceptibly, there is a turning from whisky as there was from brandy, and for the same reason, viz., the difficulty of obtaining a genuine spirit. There has thus come about a gradually growing demand for Hollands gin, which many medical men now recommend to spirit drinkers in preference to suspicious whiskies. For this reason the makers of high-class Geneva are giving more attention to English requirements than they have hitherto done, and at last the real Geneva loved by the Dutchman is obtainable in this country. We have recently compared a dozen well-known Hollands gins of various makers, consisting of those mainly drunk in England, and of gins drunk exclusively in Holland hitherto unobtainable in this country. We find that those having the largest sale in England are not the product of one distillery, but blends of spirit purchased from a number of petty distillers of varying character and quality, and which are, as is the case with so many Scotch and Irish whiskies, 'faked' for the English market. The growing demand in England for Hollands gin, however, has led the largest of the Dutch distillers—the John Jameson of Holland—Mr. H. C. Jansen, to offer his 'Goldfinch' brand of Hollands gin to the trade in the United Kingdom. What John Jameson is in Ireland, Mr. Jansen is in Holland—his own maltster, and unapproached as a distiller. The connoisseur in Schiedam drinking asks in Holland for the 'Goldfinch,' as the Irish whisky judge asks for his John Jameson. The 'ten year old Goldfinch' Schiedam, in particular, is a spirit devoid of what to many is the obnoxious character of the commonly known Genevas, of admirable flavour, and the perfection of a pure spirit."

In the interests of a section of its advertisers *Ridley's Wine and Spirit Trade Circular* characterises our statements as "a libel of the grossest kind, which is not modified by the inference that a comparative parvenu is the only genuine purveyor." The suggestion is further offered that we ought to be "brought within the criminal code." It is only by an accident that we came across this specimen of what trade journalism can descend to, and we doubt if the few dozens it circulates make it worthy of our notice, but it has not been our custom to permit any journal, however insignificant, to accuse us of mis-statement, and in this case we must even give Mr. Ridley a well-merited correction. In the first place, as to the flooding of our markets with blends of potato spirit, malt, and grain whisky, we have before us a letter from a German house asking us if we can buy potato spirit, and informing us that they can show us many recommendations from leading firms who are using it.

This is the class of spirit of which Dr. Woodside wrote in our issue of December 30th:—

"Two kinds of whisky are known in the bond, one, the old sort made from home grown grain. Corn, rye, and barley, is not 'ripe' for drinking, till it has 'matured,' for which purpose it should be kept from five to seven years in wood. It is known by the name of *pot-still* whisky, seven-tenths of the whole of the whisky in the land belongs to the other kind, and is known as new patent whisky, and is produced in this country from yellow Indian corn, but may be made from almost anything under the sun.

"It is hot, vile rubbish, burning the throat, and poisoning the brain, and does not improve by keeping. Indeed it is often swallowed at the public-house bar inside thirty-six hours from the time it left the still. And the producers are glad to have it so, for I believe if kept for over two years, it will undergo a process of rotting, as mariners know their casks of water do on board-ship."

How this trash and the vile rubbish we commented upon is doctored for the market, is referred to in a recent number of *The Wine Trade Review*, which

"Understands that another method of rapidly ageing or maturing whiskies has been developed by Mr. J. A. Nettleton of Belfast. His methods are preferably applied during the distilling operation, but are also said to be applicable in dealers stock to finished whiskies."

In recommending, therefore, to our readers to avoid such "faked" spirits, and stating which spirits our examinations have shown to be of unquestionable quality, we do a necessary duty which, however objectionable it may be to journals of the "reptile" press order, we shall not swerve from. As to Holland's Gin, to which our critic takes exception, our advice to the writer in Ridley's is to do as we did, make personal examinations in Holland. He will then find his statements a tissue of falsehoods from start to finish. He will find that the Holland's most commonly drunk in England is, as we have stated, a blend made from the product of any number of small distilleries, that Mr. Jansen the distiller, whom he calls "a comparative parvenu," and whose Holland's we recommended, actually distills annually three-fifths of the whole Geneva distilled by 302 distilleries in Holland, that he is in addition his own maltster, and can thus guarantee quality and purity of his spirit, which those who are merely blenders, buying small quantities here, there, or anywhere, cannot do. Ridley's give a list of a number of firms, who, it says, sell genuine Geneva. We do not say they do not. We merely give the results of our own examinations. We might go further, and say that the Hollands in question, is not only of the highest quality, but that it is some sixty per cent. cheaper than those hitherto offered to the trade in this country. The moral, however, of this is obvious—there is no paper so consistently and dangerously mendacious, as the so-called trade one. It is the province of trade journals to "scent out that which pays them best, and go for it baldheaded," to defend alkum in baking powder, infants starving by skimmed condensed milk, chemical "swipes" as beer, crushed dates, Indian corn, potato, &c, spirit as whisky, all of which may be very profitable to the maker, brewer, or distiller, but is injurious to the trader, the publican, and the consumer. We should hear less tirades against the evils of drink if trade journals did their duty, and not only told traders what were pure spirits, &c., but warned them against those that are "faked." The lager beer prosecution, in our present issue, is a case in point. We warned the trade months ago of this adulteration, but the trade journals, as usual, denied the practice.

THE FOOD VALUE OF SUGAR.

At a recent meeting of the Royal Society, a paper on "Sugar as a Food in the Production of Muscular Work," was read by Dr. Vaughan Harley, who first gave the chemical reasons that led him to believe that sugar was the principal factor in the production of muscular energy. He then went on to prove that it could be experimentally demonstrated that the addition of large quantities of sugar to the diet caused an increased capability of doing muscular work. By means of the ergograph it was possible to estimate the amount of work accomplished under various circumstances by the middle finger of each hand, weights of 3 kilograms, and 4 kilograms, being raised. The total height to which the weight was lifted, being multiplied by the weight used, expressed in kilogramme metres the amount of work accomplished. The first step was to ascertain the value of sugar when taken alone in the production of muscular work. During a twenty-four hours' fast on one day water alone was drunk; on another 500 grammes of sugar was taken in an equal quantity of water. It was thus found that the sugar not only prolonged the time before fatigue occurred, but caused an increase of 61 to 76 per cent. in the muscular work done. In the next place, the effect of sugar added to the meals was investigated. The muscle energy producing effect of sugar was found to be so great that 200 grammes added to a small meal increased the total amount of work done from 6 to 39 per cent. Sugar—250 grammes—was now added to a large mixed meal, when it was found not only to increase the amount of work done from 8 to 16 per cent., but increase the resistance against fatigue. As a concluding experiment, 250 grammes of sugar was added to the meals of a full diet day, causing the work done during the period of eight hours to be increased 22 to 36 per cent.

THE INTERNATIONAL SANITARY CONFERENCE.

The International Sanitary Conference was opened at Paris on February 7th, by M. Casimir-Perier. After suggesting that they would profit by the opportunity of visiting M. Pasteur, he touched on the previous conferences, observing that science and diplomacy combined had reconciled the interests of commerce with the protection of life. The frigid selfishness of nations towards one another, and of healthy individuals towards the sick or those in danger, had been largely broken down. Light, publicity, and solidarity had superseded fear and mystery, and instead of improvised precautions dictated by panic, there was a system of attestation, publicity, and preservation. The present conference, continuing the task begun at Venice, would have to pursue cholera to its source in Central Asia, which seemed to be the place of origin of all things, and it would be guided, not only by sympathy with suffering, individual friendliness, and international solidarity, but by equity. Prudence was requisite for combining guarantees for health and public interest with respect for local customs, and that spirit of persuasion which would insure the co-operation of all. The Republic felt it an honour to assist in a work of concord, civilization, and peace. M. Barrere, French Minister at Munich, was then elected President, and he called on Dr. Proust, who reviewed the results of previous conferences, and explained the programme of the present assembly. The conference, which decided that its deliberations should be secret, adjourned to Tuesday. The members lunched with M. Casimir-Perier.

ADULTERATED LAGER BEER.

Vendors of lager beer should beware to secure themselves against dangers like the following:—At Burton Police-court, on the 2nd inst., William H. Ravenscroft, commercial traveller, and John Fearn, were charged with selling lager beer which was not of the quality demanded by the purchaser, and which contained salicylic acid, injurious to health. Mr. W. A. Willcock, of Wolverhampton, prosecuted; and Mr. Stone (Derby) represented Mr. Ravenscroft. Mr. Jones, County Analyst, showed that the acid was injurious to health when taken with food, because it impeded the process of digestion. Ravenscroft was fined 20s. and 11s. costs in each of two cases, and £5 and costs in a third case. It was thought that Mr. Fearn was a victim, and he was ordered to pay the costs, 11s. 6d.

We have repeatedly pointed out how objectionable the admixture of powerful drugs, such as salicylic acid is in articles of food or drink. In this instance the percentage was enormous, being no less, we understand than 14 grains per gallon. Publicans who unwittingly or otherwise sell lager beer so heavily dosed with dangerous drugs, as appears to be the case in the present instance, run grave risks, and they would do well to obtain a warrant for the lager beers they use that they are free from preservatives. So far as we are aware, this is the first case in which a prosecution has been successfully sustained for the admixture of preservatives to food stuffs. The question of the repression of this practice is one, however, that has for a considerable time engaged the attention of the medical profession and those concerned with the enforcement of the Food and Drugs Acts, and now that a conviction has been obtained, and magistrates hold the admixture of these powerful drugs to be adulteration, publicans should take care that they are not made the victims of the brewers and dealers using such chemicals.

A NEW "MARGARINE" MOVE.

At Birmingham, on Feb. 2nd, John Watkins, provision dealer, of Newtown-row, was summoned under the Food and Drugs Act for selling butter which was not of the nature, substance and quality demanded. Mr. Bickley, who appeared for the defendant, applied for an adjournment on the ground that the proceedings should have been taken under the Margarine Act, which was specially framed to meet cases like the present one and under which greater facilities were offered for defence. Sir James Sawyer said that it was clearly right to assist the authorities in protecting the public, but it appeared that in that case the persons responsible for the protection had thought proper, in the plenitude of their wisdom, to consider a question of agency as a difficulty which was before them, and in view of this had taken proceedings under a certain statute rather than under another which would appear to them (the Magistrates) to be obviously the more direct course in the case in question. That being so the Bench considered that the prosecution should be represented by a solicitor to reply to Mr. Bickley's objection, and with a view to that being done the case would be adjourned for 14 days. Several similar cases were put back for that period on like grounds.

OSTEND BUTTERS: A WARNING.

Grocers would do well to note that Ostend butters have "gone wrong" once more, as much as *forty per cent. of margarine* being now found in these so-called pure butters. Some day the necessity will dawn upon importers both for their own protection and that of retailers of supporting our demand for a compulsory Adulteration Act with specially trained Food Inspectors moveable about the country as Inland Revenue officers now are, and for an efficient staff of Food Analysts at the Customs to make regular examinations of butter and all food articles imported. Such a practical way of coping with adulteration would save the reputation of many an honest man now prosecuted for adulteration of which he is personally guiltless, and it would save some millions of pounds annually to the public. Whilst if it cost even as much as £100,000 per year, that money would be the best expended of our time.

THE BAGS OF MYSTERY TRADE.

One of the most difficult of trades to deal with as regards efficient inspection, so necessary for safe-guarding the public, is the sausage trade. Some few months ago there was an outbreak of cases of poisoning in several parts of the country from sausages made at Leicester. At North London Police-court the other day some startling revelations were made as to the practices of sausage manufacturers. In the examination of a sausage maker's apprentice it was elicited that *sausage rolls were the product of red ochre, pepper and salt, and soaked brown bread. In answer to an enquiry as to where the sausage was, it was stated that there was none required. It surprised Mr. La e, the Magistrate, to learn that red ochre had anything to do with a sausage roll, and he was informed that it was to give the bread the appearance of beef.*

A butcher, named John Banks, was charged on the 22nd ult., at Stoke-on-Trent, under the following circumstances:—On the 3rd of January P.C. Clayton was passing this butcher's premises, when he noticed a bad smell, which induced him to go inside. He found some meat being stewed in a boiler, a quantity of meat in the cellar, and various portions of meat in other parts of the house. To him the whole of the meat appeared to be rotten, and it gave off a most sickening smell. He left officers in charge of the premises while he gave information to the sanitary officials. The same night Dr. Johnson, Medical Officer of Health, with Mr. Greatbach, his deputy, visited the place, and the following day the Sanitary Inspector went to the house, seized the meat, and had it formally condemned, after which it was ordered by a Magistrate to be destroyed. In supporting the statement of the Town Clerk, Dr. Johnson said that the meat weighed about 1cwt. altogether. It consisted of pigs' skin and scraps and offal from a slaughter-house. Portion of it had been prepared for food as brawn and sausage, another portion was in course of preparation, and there was some that had not been dealt with. The whole of the meat was putrid and unfit for human food. It was in such a state as likely to convey disease to persons who partook of it. Mr. Sproston addressed the Court for the accused, but there was really no defence. The Stipendiary said this was absolutely one of the worst crimes that could be committed if one looked at the offence as against the community. By the commission of this crime the health and even the lives of hundreds of individuals might have been sacrificed. There was not the least doubt that this practice had been going on for some time, and that the Potteries had been inundated with diseased food in the shape of sausages and preserved meat. This was not a case which could be dealt with by the imposition of a fine, and therefore the accused would be sent to prison for three months.

This case, and those to which we last week directed attention as to the use of rotten eggs as a staple article by confectioners, show that a great deal more attention should be devoted to food inspection than can possibly be given to it by the existing staff of officials. There is not one per cent. of the confectioners who use rotten eggs for pastry discovered or punished. The preservatives, flavourings, and colourings enable any kind of putrid offal to be used for sausages, which, once they are made up, whatever may be the suspicions of the Sanitary Authorities, cannot be interfered with. The present system of food inspection affords no real facilities whatever for putting a stop to the practices of scoundrels who foist diseased or poisonous food upon their fellow citizens. The work of inspection is delegated to already over-worked Sanitary Inspectors, and is a task to which they are only expected to devote spare moments, which they very seldom have. The great importance of a pure and wholesome food supply should of itself be sufficient to show the need for the appointment by Local Authorities everywhere of specially-trained food Inspectors. It is not only ridiculous, but dangerous to the public health to insist that the duties of Food and Sanitary Inspectors should be combined, inasmuch as they have very little in common.

HORLICK'S
MALTED
For Infants
and Invalids.
MILK
 CONTAINS PURE MILK, WHEAT AND BARLEY MEAL.
 NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
 OF ALL CHEMISTS AND STORES.
 SAMPLE FREE. 39, SNOW HILL, E.C.

BAKING POWDER ADULTERATION.

The following case seems to give a hope that an appeal, will be made against the decision of Justices Hawkins and Lawrence that baking powder is not an article of food.

"At the Pontypridd Police-court, on January 31st, Margaret Jones, grocer, of Pontypridd, was summoned for selling a packet of baking powder injurious to health. According to the analysis the sample contained 64 per cent. of alum, and allowed 9 per cent. to go direct into the stomach without being neutralised by the bicarbonate of soda. The remainder of the sample was made up of rice-flour. Superintendent Jones, in addressing the Bench, said that, in obedience to the High Courts, he had to ask the magistrate to be allowed to withdraw the charge; but at the same time he would like to know what baking-powder was intended for unless it was for food, for it was well known that the bicarbonate of soda was a portion of nearly every cake made in dwelling-houses in this part of the country. It was as much food as was pepper, and surely as much so as German yeast, but these probably would not be food according to the High Courts. He would ask that the case be allowed to remain until he received further instructions from the County Council, who, he believed, intended appealing against the decision if they could, but, failing that, they would endeavour to have a new law passed at once. The Stipendiary said that the case at present must stand over in obedience to the decision of the High Courts; but it did seem strange to him that baking-powder was not food, for they should consider that food contained so many ingredients."

Upon its face the decision of Justices Hawkins and Lawrence is clearly wrong. Section 2 of the Act of 1875 says, "The term food shall include every article used for food or drink by man, other than drugs or water." Justices Hawkins and Lawrence construed this Section as meaning "every article used *as* food." Now there is a very important difference in the meaning of the word "for" as compared with the word "as." Baking powder is clearly an article used "for" food although it is not one used "as" food, and it is equally clear that Justices Hawkins and Lawrence are wrong in their judgment, Section 2 of the Act of 1875 being clearly against them on the point. That the County Council of Glamorgan for doing a righteous act in protecting the public against an organised attempt on the part of a ring of makers of an adulterated article to injure the public with impunity should be mulcted in any costs is a scandal, and we hope they will carry the case to the final court of appeal and secure the reversal of a decision that is not only contrary to the law and to common sense, but is fraught with so many grave dangers to the public.

VINEGAR AND SOMERSET HOUSE.

The report of the Committee of the Northumberland County Council entrusted with carrying out the provisions of the Sale of Food and Drugs Act, contained the following from Mr. John Pattinson the official Analyst for the county:—"The accuracy of my analysis of a sample of malt vinegar, examined by me during the last quarter, having been disputed by the seller, it was agreed to refer the sample for the decision of the Somerset House chemists. I had reported the vinegar as containing 45 per cent. derived from other sources than malt. The Somerset House chemists reported that the vinegar in their opinion 'corresponds with malt vinegar made from malt and unmalting grain,' and the action was consequently dismissed. I protest, most emphatically, against the decision of the Somerset House chemists as being incorrect and mischievous. Malt vinegar, as its name implies, should be made from malt alone. Such vinegar possesses a special flavour and aroma of its own, much prized by connoisseurs, which vinegar made from other sources does not possess. This is admitted by experts in vinegar. Now, it was admitted by the maker of the vinegar in question that this vinegar was made chiefly from rice, and the analysis indicated that the rice had been 'hydrolysed' by heating with dilute sulphuric acid, and not by the action of disastase of malt. It was, therefore, really not 'malt vinegar' but 'rice vinegar,' or 'rice and malt vinegar,' and it certainly should not be allowed to be sold as 'malt vinegar,' just as a mixture of oatmeal and barleymeal is not allowed to be sold as oatmeal. Should the Somerset House chemists' decision in this and similar vinegar cases be upheld by the Magistrates, the present makers of genuine malt vinegar will soon be driven out of the market by the makers of so-called malt vinegar, made chiefly from inferior and cheap materials, and the public will no longer be able to obtain genuine malt vinegar with its special aroma and flavour."

SPENT GINGER.

The following extraordinary letter has appeared in some grocers' journals:—

SIR,—With reference to the report which appeared in your last issue of a prosecution for the sale of adulterated ginger at Sheffield, may we say it has taken us and the trade generally completely by surprise, as so-called exhausted ginger, to our knowledge, always has been used and sold as a cheap ground ginger without question, and has been analysed frequently by many Analysts both in town and country, and always been pronounced as genuine; and without doubt, in our opinion, it is genuine, and has more strength and flavour in it than some of the cheaper kinds of ginger. Quite recently a pamphlet has been published giving the relative properties by analysis of various kinds of gingers, both exhausted and unexhausted, the principal elements being "essential oil," "etheral oil," and "alcoholic extract." The latter-named element is, we understand, that contended as being deficient in the ginger in question; but we have it upon the authority of one of the most eminent Analysts here that "alcoholic extract" is almost devoid of taste and smell, and that it is really the "essential oil" and the "etheral oil" that gives ginger its strength and flavour. But, taking the figures given in the pamphlet above referred to, it will be found that an admixture of some of the exhausted gingers with others of the unexhausted, even to the extent of 50 per cent. of each, will produce a ginger which in some cases contains as much, and in other cases more, of the three properties mentioned than if the commoner kinds of unexhausted, such as Japan and Bengal, were used alone; and the admixture being sold at a price according to the value of the gingers used, as was the case in question, seeing also that no standard of strength for ginger is given in the Act, we fail to see wherein the Act has been contravened. Upon these lines we instructed our friends to base their defence, and felt quite confident, from the facts advanced, the prosecution could not be maintained, and that the Magistrates would dismiss the case. We regret, however, that they took a different view of the matter, and we cannot allow their decision to pass unchallenged, as, if the theory of the Sheffield Analyst is to be upheld in any future cases that may arise, it will practically do away with the use of the commoner kinds of ginger altogether, as some of these, which are largely imported and used, are not so strong in the essential properties of ginger as some of the so-called exhausted kinds, nearly all of which are made from the best kinds, and in most instances with very little of the strength taken out. No doubt some of the ginger-beer and essence makers take out the whole of the strength, but the parcels so treated would be valueless, and, so far as we know, are not used. We may add, in conclusion, that so-called exhausted gingers have only been used by us in our common, low-priced qualities.—We are, etc.,

DRYSDALE, DENNISON AND Co.

131, Upper Thames-street, E.C.,
February 1st.

WORTHY OF NOTE BY BOTTLERS.

An American firm has invented a "Protection Bottle," which is a bottle that once emptied of its contents cannot be refilled. The advantages of such a contrivance are obvious to makers of high grade wines and liquors who are constantly annoyed by the fact that their bottles are refilled with inferior goods. It is said that this bottle has been subjected to the severest tests, even to heating it to exhaust the air, and placing it inverted in a vessel of water, all of which it has withstood. The amount of fraud carried on at the expense of firms of high repute by rogues who purchase empty bottles of high-class firms and fill them with concoctions of their own, is so great, that any invention that would stop this kind of swindling would be welcome.

ENFORCING THE ACTS IN FIFE.

At Dumfermline Sheriff Court, on February 2nd, Elizabeth Anderson Wilson or Norman, grocer, Crosshill, was fined £2, or 10 days' imprisonment, for selling margarine for salt butter.

George Scott, grocer, Cardenden, was fined 30s., or 7 days', in consequence of his wife having committed a similar offence.

The following is extracted from "THE ANALYST," for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the
AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,
Member of the Society of Public Analysts, the Company's Resident Analyst.
The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER,
24 of WATER, and 22 of SUNDRES."

TEA TRADE REVELATIONS.

Mr. Commissioner Kerr had a glimpse at the fringe of the great tea question in the City of London Court on February 2nd. Mr. Charles C. Yeaton, 16, Aldgate-avenue, E.C., sought to recover the sum of £5 19s. 8d. from Messrs. Paton & Co. (Limited), tea merchants of Tower-hill Warehouses, E.C., for work done in "treating" tea to their alleged order. Mr. Castle appeared for the plaintiff, and Mr. E. B. Tattershall for the defendants. Mr. Castle said what the plaintiff did was to treat the tea which the defendants sent to him and convert it into good tea. He understood it was a patent process. Mr. Tattershall, we do not know why, said there was no truth in that. Although the process is a patent one, Nos. 4,088 and 4,089 covering Cahill's process and his machine, and the patent has already given the Customs considerable trouble. Further, Mr. Tattershall said no order was ever given to the plaintiff to do anything of the sort. The plaintiff's solicitor's description of the process was distinctly novel, and nowadays some solicitors seemed to think they knew more about the tea trade than large firms like the defendants. The plaintiff was called, and said that in November last he employed a person named Cahill who "treated" tea, that was, when tea was imperfect or musty it was "fired" by a machine which improved it. He had machinery fixed up for the purpose. He instructed Cahill to get orders from various persons and firms, and amongst others who availed themselves of the process were the defendants. They sent him 2,473 lbs. of tea, which were duly "treated." The tea was delivered upon the defendants' order to Messrs. Donaldson. Mr. Tattershall said the only person whom they dealt with was the man Cahill. They knew nothing about the plaintiff. It came upon them as a surprise that Cahill was in the plaintiff's service, as they had never dealt with the plaintiff. Cahill should be there to prove what the plaintiff was relying upon. The Plaintiff: There is no necessity for Cahill to be here. My dealings were with Mr. Pearman, the head of Paton and Co. Mr. Commissioner Kerr: You said that Cahill took the order. He must be here to prove your case. Mr. Tattershall said there was a complete answer to the action. Mr. Cahill said that he was a patentee for treating tea. He took the order from the defendants for treating the tea in question, and it was done accordingly. He did the work for the plaintiff as well as himself, because they entered into a sort of partnership to carry on the business. Mr. Yeaton was to collect the money. Mr. Commissioner Kerr said if Cahill was the plaintiff's partner then he should have been added as a co-plaintiff. Mr. Castle said the debts of the business were collected by Yeaton. Mr. Commissioner Kerr: That does not authorise him to sue in his own name. Mr. Castle submitted that it did. Mr. Tattershall said there was really no ground for the present claim. They had paid Cahill for this debt which the plaintiff were now suing for. Mr. Castle said that the plaintiff agreed to pay Cahill a percentage of the business which he brought in. Mr. Commissioner Kerr said that did not make any difference; Cahill was a partner with the plaintiff. He must enter a non-suit. Mr. Tattershall said the statements which the plaintiffs had made were likely to cause them serious harm unless they were absolutely denied. There was no truth in the suggestion which had been thrown out. They sent the tea to the plaintiff to re-fire it, a process which was well known to every one in the tea trade when tea had been sea-damaged, as was the case in this instance. Mr. Commissioner Kerr said of course the defendants could bring an action for any statements which were untrue, if they were injured by them, and if they were so advised. He entered a non-suit, with costs.

HOW PURE BEER IS MADE.

The *Mark Lane Express* has done a distinct public service by publishing the following list of the materials now used by brewers in lieu of honest wholesome malt and hops. Our contemporary says:—

"Taking up one of the journals devoted to brewers' interests, and casually glancing at it, the number of strange substances found mentioned is very great. It is striking evidence of the use by brewers of other materials than malt and hops in beer. The following list of such things will probably startle even the most accustomed; but it has been prepared simply and solely by taking down, in the order in which they occur, the things advertised for sale, and which we know are used by brewers in the beer. Had we taken other substances, the list, long as it is, would have been greatly augmented. The same substances occur more than once in some instances, because several makers of the same thing give it a distinctive name. Were the subject not too sad to laugh at we might be tempted to make fun of the death and thunder threatened by rival makers who shall attempt to infringe each other's valuable patent rights. We know from the files at Somerset House that the public have paid heavily in some cases for these valuable rights, but we find no trace in the law lists of actions brought against palpable infringements. We are also informed that the following list is by no means full, as certain traders do not advertise their goods, although they are admittedly freely used by brewers. Still, somewhere about a hundred and fifty is a long list, and if farmers knew its full meaning it would be as sad to them as it is long and uncanny:—

Laevo saccharum	Phylax
Inverted sugar	Premier dry calcic-sulphite (two qualities)
Carameline	Premier Burton water crystals
Sacchrosite	Premier Dublin water salts
D. G. C. (dextrinous grain caramel.)	Premier hop extract
Hop equivalent	Premier heading syrup and powder
Caramelised dextro maltose	Acetic acid
Dutton's malt flour	

G. and S. patent dextro diastatic malts	Bisulphites of lime, magnesia, potash, and soda
Gelatinised rice malt	Sulphites of lime, magnesia, potash, and soda
Gelatinised maize malt	Sulphates of lime, magnesia, potash, and soda
Flaked golden maize	Premier barley malt extract (3 qualities)
Flaked silver maize	Premier rice malt extract (3 qualities)
Granulated silver maize	Premier malto dextro glucose (3 qualities)
Granulated golden maize	Flaked maize malt
Caramel	Brewing chlorides
Lionbrand brewing sugars	Catechu
Saccharines	Chloride of calcium
Dextrin maltose	Chloride of sodium
Torrefied maize malt	Chloride of magnesium
Pure malt saccharine	Gypsum
Cane sugar	Kainit
Invert sugar	Neutralizers (liquid and powder)
Saccharum	Pearl ashes
Pale yellow malt sugar	Permanganate of potass
Premier liquid caramel	Salicylic acid (powder and solution)
Premier caramel chips	Sulphurous acid
Premier dextrinous caramel (solid and liquid)	Tannic acid
Premier salvine crystals (crushed)	Jet caramel
Premier black beer priming	Dry calcic sulphite
Premier potassic-bisulphite transparent crystals	Calcic chloride solution
Premier ale priming	"Cum Grano Salis," for water hardening
Tartaric acid	Malto peptone yeast food
A. and B. solutions	Pure malt saccharine
Phosphate ammonia	Raw grain
Phosphate lime	Corn flakes
Phosphate soda	L.H. liquid hops
Carbonate of soda	Aroma of hops
Caustic soda	Compound yeast food
Caustic potass	Hydro-sulphite of lime
Grape or brewing sugar	Hydro-sulphite of magnesia
Patent acid neutraliser	Sulphosite
Burton salt liquor	Patent neutraliser
Dry sulphate calcium	Pure sulphite of lime
Inverted cane sugar	Artificial hops
Maltone saccharine sugar	Aphodite
R. and W. grape sugar	B.Y.F. Burtonising fluid
Brewer's saccharum	Pure bicarbonate of soda
Laevulose saccharum	African hops
Dextro laevulose	H.S. Hop supplement
Laevo-maltose	Patent dry frothing powder
Sago and maize saccharines	B.P. beer preservative
Purest sulphurous acid	P.H. permanent hardening
Antacidine	Y.N. yeast nourishment
Ecumin or foaming powder	M.M. mash material
Burton spring liquor	Heading solution
Anti-acetous ferment liquor	Brewing material No. 1
Torrefied flaked malts	Patent grist made from rice only
Gelatinised flaked rice malts	Dextrin-maltose
Patent antacid	Dextro-saccharum
Patent heading powder	Glucose
Burton ale salts	
Calcic sulphite	
K.M.S.	
Laevuline priming	
Flaked malts	

The contention that beer is now purer and better because of the use of these nostrums and substitutes is absurd. The two largest brewers use very few of these things; yet their beer is better liked by consumers, and their balance-sheets show that they make handsome profits. It is more fair to argue that because of the use of other material than genuine malt and hops, recourse is had to many of these horrid concoctions and chemicals. Any brewer using any substance other than malt and hops should be made to declare it. This is as much the consumer's as the farmer's question."

Our contemporary has forgotten one very important thing, i.e., to point out who is responsible for the above degradation of English ale. The permission to use such substances in place of malt and hops was given upon the advice of the same blundering gang of ignorant Somerset House Chemists who by their incapacity to correctly analyse butter or lard, and their standards encouraging milk swindles enable foreigners to mix up to 10 per cent. of margarine with butter, 10 per cent. beef stearine or other adulterants with lard, and milk vendors to add eight gallons of separated milk and one gallon of water to good genuine milk without a possibility of punishment. If farmers but knew the truth this ignorant department has been the bitterest enemy English agriculture possesses, and more deadly to English trade than all foreign competition.

JARROW TOWN COUNCIL AND ADULTERATION.

The Jarrow Town Council Sanitary Committee having sanctioned the prosecution by the Inspector of two parties—one for selling milk deficient in cream, the other for selling cocoa containing fifty per cent. of starch and sugar. Councillor Roberts moved that the prosecution be withdrawn, on the ground that none of the foreign ingredients were deleterious to health. Councillors Graham and Chalmers supported. Ald. Price considered the sale a gross fraud, and was astonished that labour representatives should make such a proposal as to try to prevent the Council from protecting purchasers, especially the poor. Councillor Rust said the sale was a downright robbery. The amendment was lost, only three voting for it.

THE SANITARY INSPECTORS' ASSOCIATION. ANNUAL DINNER.

The annual dinner of this association was eaten at the First Avenue Hotel, on Saturday evening, February 3rd, Sir Benjamin Ward Richardson in the chair. Amongst the visitors were Dr. Thorne Thorne (Chief Medical Officer, Local Government Board), Sir T. Crawford, K.C.B., Rev. Canon Leigh, Drs. Jackson, Fletcher Little, Corfield, Messrs. E. H. Pickersgill, M.P., H. C. Stephens, M.P., C. E. Cassal, &c., &c.

Sir Benjamin Ward Richardson was, as usual, very much in evidence, giving visitors the impression that the Sanitary Inspectors' Association was a society for the *ad majorem Richardson gloriam*. The speeches, on the whole, with the exception of some sensible and very necessary remarks by Mr. Thomas, the Chairman of the Association, were devoid of importance to Sanitary Inspectors, pirouetting as they did round every possible question save that affecting the real interests of Sanitary Inspectors themselves. Mr. Henry Thomas was wise in bringing clearly before the minds of those present the really important questions which had been neglected by all the speakers who had inflicted lengthy doses of rhetoric upon the diners. He pointed out what we have times over referred to—that is, the grave and unfair difficulties under which the work of the Sanitary Inspector is performed; how the zealous man in many a district is in the position of electing to exercise his zeal, which, if he does, he must do against those who, as members of the Local Authority, are his masters, with the certainty that, when he comes up for re-election, he will be discharged, and have a difficulty in securing another appointment, or to recognise that his personal interests make it desirable that he should be blind to sanitary *laches* on the part of the favoured individuals composing the Board or Vestry, as the case may be. This has long been a question of the greatest importance to the public, and one which, until it is settled by making the Inspector's appointment terminable only by the sanction of the Local Government Board, must, of necessity, prevent the Public Health Acts being carried out as they ought to be in many parts of England. It certainly is, as Mr. Thomas eloquently urged, a queer state of things when Bumble, who does out relief to the poor, has a permanent appointment, and can only be discharged by the sanction of the Local Government Board, whilst the official upon the adequate discharge of whose duties depends the health and the lives of the entire community is placed absolutely at the mercy of the jerry builders, or slum property owners, whose self-interest prompt them always to secure seats on the Vestries and Local Boards. Of all men, the Sanitary Inspector should be able to do his duty absolutely free and unfettered by any considerations connected with the continued occupation of his post.

Moreover, taking as they do their lives in their hands, entering fearlessly and unselfishly to combat small-pox, typhoid, cholera, or any danger that menaces the public health, we think this body of men has a further claim on those whom they serve. Not only should they have permanency of appointment, but, liable as they are to be stricken down at any moment, and considering the risks they continually run, there should certainly be provision made for pensioning these public servants when after years of work they are no longer able to toil. It has always seemed to us to be matter for surprise that so much public money should be wasted in commutations, &c., of pensions to noble dukes, whose lives have been a disgrace to morality and honour, or should be given to idle hangers-on of this or that political impostor, and that those who really do work for the country should in old age be liable to be thrown aside like a sucked orange, and trampled under foot.

A pleasing feature of the *re-union* was the presentation of a very handsome gold watch and illuminated address to Mr. H. Alexander, the vice-chairman of the Council.

Dr. Thorne Thorne incidentally paid a very high compliment to the splendid work the Sanitary Inspectors of England do. In a recent conversation with the American delegate to the Cholera Congress, the question of quarantine was discussed, when the delegate frankly admitted that quarantine, so far as America was concerned, was absolutely necessary. They had no sanitary army as in England, and they dared not let disease get near them, so were compelled to adopt the quarantine method of keeping it at a distance. After this tribute to the value of the work of Sanitary Inspectors it may reasonably be urged that the Local Government Board ought to take steps to place the sanitary army, whose aim is to save, on at least the same footing as the army whose mission it is to kill, for to our mind those who are engaged in the protection of the public from disease have stronger claims to a pension.

Dr. Fletcher Little's speech was, with that of Mr. Thomas, more in accord with what one would wish to have been the true spirit of the meeting. He said that no more fearless, brave, or patriotic body of men existed in England than the Sanitary Inspectors. Where even the clergy would not go, they went, endangering their lives for the public benefit. Incidentally the doctor paid a glowing tribute to the skill of a Sanitary Inspector who had persisted in finding the cause of the dampness and bad sanitary condition of a house in which he with a medical friend had resided. It baffled sanitary experts, and at last he had reluctantly to make up his mind to vacate the premises, when the Inspector (Mr. Phillips, of Marylebone) found the origin of the trouble in the yard of an adjacent builder who had very carefully concreted over a well whose waters found their way beneath the doctor's residence.

Altogether the gathering was a very pleasant one, although the dinner was scarcely as good in character as that of the previous year. We trust that the new year will see more strenuous efforts made to secure fixity of tenure, adequate remuneration and retiring

pensions for Sanitary Inspectors. A field day once a year, and an occasional resolution will do little towards these pressing reforms. They can only be obtained by persistently pressing them before the attention of the public by lectures, by press discussion, and the like, to which the Association would do well to devote some portion of its attention. The main features of the gathering were as follows:—Sir Thos. Crawford responded for "The Army and Navy," proposed by Dr. Danford Thomas. Mr. J. McMillan proposed "The Houses Parliament" in the absence of Lord Norton. Mr. H. C. Stephens, M.P., and Mr. Pickersgill, both replied. Mr. Pickersgill, M.P., said the future of sanitation was with the Inspectors, and it was open to them, if each would bring his brick to build up that city of the future, Hygeia, from which all epidemics would be banished and where every man would be enabled to live out his life and come to a ripe old age like a shock of corn in its season. (Applause.)

Professor Corfield proposed "The Executive." It was quite clear, he said, that an association which in ten or eleven years had grown so great must have an excellent executive. With regard to the Hon. Secretary (Mr. S. C. Legg) no words of his could adequately express the Association's obligations to him. (Cheers.) As an honorary member, he declared that from no similar body to which he belonged did he get such sure, direct, positive, and continuous information, as he did from the Sanitary Inspectors' Association. That proved they had a Secretary who did his duty well. The toast was duly honoured, and Mr. Thomas, Chairman of the Council, responded on behalf of the Executive. He said two of the chief objects they had striven for, not only on behalf of the members of their own Association, but of officers in all parts of the kingdom, was greater security of tenure of office for Inspectors and more adequate salaries. Many Inspectors had to go up year by year for reappointment, and it often happened that a man who had done his duty without fear or favour was put aside, and a more complaisant man was put in his place.

The last toast was in honour of "The Press," proposed by Mr. Tidman, C.E.

EXCESS WATER IN IRISH BUTTER. DECISION.

At the Manchester City Court, on February 7th, Mr. Headlam, the Stipendiary Magistrate, gave his reserved judgment, dismissing two of the summonses against local dealers in Irish butter, who were proceeded against by the City Corporation for having over 15 per cent. of water in what they sold. He thought the Government ought to determine the standard, but as it was left to the discretion of Magistrates it might be expected to vary in different places. The Irish butter trade had long been a very large and important one. If too high a standard was adopted the trade might be driven out of the market, and, on the other hand, if the standard was too low it would produce carelessness and fraud on the part of the manufacturer in leaving water in which could be pressed out of it. If water was kept in which by care and reasonable diligence could be removed, it seemed absurd to say that that butter was not sold to the prejudice of the purchaser.

A FAIR REQUEST.

Our contemporary, *The Meat Trades' Journal*, says: "For years we have called for a distinction between meat seized by Inspectors, and meat voluntarily surrendered by salesmen or traders. For the first time we observe that this important point has been conceded in Edinburgh, where, at a meeting of Edinburgh Town Council, it was reported 'That the amount of diseased meat seized or surrendered during December was 10,906 lb., of which 9,939 lb. had been consigned from the city and 967 lb. from the country.' This is only bare justice to those engaged in our business, who are too frequently saddled with the odium of possessing diseased meat, whereas, in ninety-nine cases out of a hundred, they of their own free will brought the Inspector to look at the meat. Until it is distinctly stated in these reports how much was actually seized and how much surrendered, such items as quoted above are misleading to the public and prejudicial to the good name of our trade."

COLEMAN'S "WINCARNIS" OR LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

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Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

Sole Manufacturers:

COLEMAN & CO., Limited, NORWICH and LONDON.

A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps.

WARWICKSHIRE C. C. AND ADULTERATION.

At the last meeting of this Council Mr. Vickers brought up the report of the Committee, which detailed the Inspector's work for the year 1893. Mr. Bennett called attention to the unsatisfactory state of the law in regard to the sale of bread. He had frequent complaints of short weight, but until the law was made more stringent there would be but little improvement in this respect. Of course, the law was supposed to require all ordinary bread to be sold by weight, but the practice of most bakers, he believed, was simply to weigh the dough before baking, allowing so much for evaporation and waste, and the bread is not again weighed, except at the purchaser's request. Others make a practice of weighing all loaves sold in the shop, but do not weigh any delivered from the carts. It was by this latter means that the greatest amount of fraud was committed.

The Sanitary Committee recommended, "That a circular be sent to the various benches of Magistrates in the county, drawing their attention to the very small fines inflicted in some cases under the Food and Drugs Act, and urging that in the public interest more substantial fines should be inflicted in cases where fraud is shown to have been attempted." Alderman Evans, in moving the adoption of the recommendation, said that they had found several cases of adulteration of a very serious extent in which they were advised by their Analyst that there must have been deliberate fraud on the part of the person adulterating. The Committee had no desire to interfere with the discretion properly vested in Magistrates. In one case butter was found to have been adulterated with 80 per cent. of foreign fat, and in another with 90 per cent. (Laughter.) In one of these the culprit was fined 6d. and costs, and in the other 1s. and costs. (Laughter.) They must not be misled in that matter, because there was this difficulty—the amount of the costs was not stated. It was rather a pity that the fine and costs could not be included in one sum. (Hear, hear.) Lord Norton said that if Magistrates would announce that the payment would be so and so, including costs, they would then really know what it was. It was absolutely delusive to say "sixpence and costs," and not announce what the costs were. (Hear, hear.) Mr. R. Ramsden said that Magistrates frequently found it was not the retailer, but the wholesale merchant or someone else, who was the adulterator. (Hear, hear.) The Chairman said that he thought it was not altogether a wise thing to pass a resolution of this kind. Every case depended upon its circumstances, and no man could tell what was a proper penalty unless he had all the circumstances before him. It was impossible for the Council to call upon Magistrates to explain their sentences in those cases, or they would be sitting there all the year round as an appeal court. Alderman Evans said that he moved the recommendation with reluctance, because he felt he was treading on very delicate ground. He thought he should be quite justified in withdrawing the resolution, after the strong expression of opinion. (Hear, hear.) The committee only adverted to cases where fraud was attempted. The resolution was then withdrawn.

NOTTS COUNTY COUNCIL AND THE FOOD AND DRUGS ACTS.

The Duke of St. Alban's moved the adoption of the report of this committee:—

It stated that the Inspector of Weights and Measures reported that they had stamped 601 weighing instruments, 4,615 weights, 819 measures, and adjusted 1,435 weights. The fees received amounted to £62 15s. 7d. There had been two convictions for selling bread otherwise than by weight, two for omitting to carry scales when delivering bread, and one for obstructing the Chief Inspector in the execution of his duty. The County Analyst reported that during the past quarter he had analysed 46 samples under the Food and Drugs Act. Of these 10 were adulterated. Of the 17 samples of milk two only were adulterated, although five others were very poor. The Analyst, however, was unable to say whether they had been artificially weakened, or whether the quality of the milk was occasioned by natural causes. Of the 14 samples of spirits seven were adulterated with added water beyond the limit allowed by the Act. Of the seven samples of butter one was adulterated with 90 per cent. of margarine; all the other samples were genuine. The total percentage of adulteration during the quarter was 21·8 on the samples analysed, which was a lower figure than had been observed in any previous quarter of the past year. The committee recommended the appointment of Mr. J. R. Dunston as a District Analyst under the Fertilisers and Feeding Stuffs Act, 1893, and submitted a scale of fees to be charged, travelling expenses to be added. The charge to merchants and sellers was somewhat higher than to farmers and buyers.

Mr. Mellish seconded, and the motion was agreed to.

HE HAD SOMERSET HOUSE IN HIS MIND.—The chemist wrote it "inorganic analysis," but the printer set it "ignoramus analysis."

IMPORTANT TO DAIRYMEN.

At the Barnsley Court-house, on Jan. 29th, John William Houghton, milkseller, until recently in the employ of the Barnsley branch of the Farmers and Cleveland Dairies Company (Limited), was charged with having stolen nine pints of milk, value 1s. 6d., the property of the company. The information was laid by William Stableforth, of Newcastle-on-Tyne, general manager of the company, and Mr. Carrington prosecuted. Mr. Carrington said the company employed about 400 sellers. They formed a suspicion that prisoner was adulterating the milk, and this proved to be the fact by analyses made of the milk which the prisoner returned. On the 17th ult. a trap was set for him. Prisoner received his usual supply of milk at the dairy, and Detective-Sergeant Parker took a sample of the original supply. Subsequently the prisoner was intercepted on his rounds, and Detective-Sergeant Parker asked for a pint of milk from the can which he was carrying. Prisoner demurred, and wanted to supply it from a large can on wheels. Parker persisted, however, and got a pint from the hand-can. An analysis by Mr. Allen, of Sheffield, showed that, while the original milk was of fair quality, the second sample from the hand-can contained 62 parts added water. Prisoner pleaded not guilty to the charge, but admitted the adulteration. After the Bench had consulted, the Chairman remarked that there was not only the thefts, but the company had been made liable to a heavy penalty for cheating customers through their servants. Prisoner would be fined 40s. and costs, in all £7 3s., or one month's imprisonment. If another case of the kind came before them, the offender would be sent to gaol without the option of a fine.

HOW THEY DO THINGS IN FRANCE.

The following advertisement taken from a recent number of *L'Industrie Laitiere*, the leading French dairy paper, shows how much more effective the law which deals with adulterators is in France than it is with us.

"Extract from the minutes of the Court of Appeal, Caen.

By a decree of June 16th, 1893, the Court of Appeal of Caen Criminal Department, has condemned Emile Levigoureux, aged 49 years, butter merchant, living at Mezidon, to four months' imprisonment, three thousand francs fine, and costs of the trial, in virtue of Articles 1-4 of the law of March 14th, 1887, for having, within less than three years, and especially during the month of June, 1892, at Mezidon, Cherbourg, and other places, exposed for sale, sold or exported under the name of butter, mixtures of margarine and butter."

The Court ordered this decree to be published, at the cost of the defendant, in thirty journals, specially designated by it, amongst which is *L'Industrie Laitiere*. Also, that the decree shall be affixed at the cost of the defendant, at the gate of the Caen butter market, at that of the *mairie* of Mezidon, and on the door of the house of Levigoureux in the same place, at those of his shops at Mezidon, as well as in the market at Cherbourg.

LEAD POISONING FROM EARTHEN JARS.—A number of cases of lead poisoning have appeared in Great Britain, which have been traced to wines and beer made in glazed earthen vessels. G. A. E. Roberts points out, in *British Medical Journal*, that the use of lead in glazed dishes should be prohibited, or they should be marked in some way to show that it was unsafe to brew in them.

THE Board of Agriculture have confirmed the appointment of Dr. Maodougall, Dundee, as Analyst of the county of Perth under the Fertilising and Feeding Stuffs Act.

William Davies, landlord of the American Inn, New Canal-street, was convicted of selling whisky 38 degrees below proof. He pleaded in extenuation that he had only been the tenant of the house four days when the whisky in question was bought. He was fined £2 and costs.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
Powell's Balsam of Aniseed—Coughs and Bronchitis.
Powell's Balsam of Aniseed—Coughs and Hoarseness.
Powell's Balsam of Aniseed—Coughs and Lung Troubles.
Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
Powell's Balsam of Aniseed—Coughs.—Established 1824.
Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
Powell's Balsam of Aniseed—Coughs Relieved Instantly.
Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
Powell's Balsam of Aniseed—Coughs.—Trade Mark.
Powell's Balsam of Aniseed—Lion, Net. and Mouse.
Powell's Balsam of Aniseed—1s. 1½d., 2s. 3d.

BLACKMAN VENTILATING Co., LIMITED,

SPECIALISTS in WARMING and VENTILATING, Removing HEAT, DUST or STEAM from Factories and Workshops, and in DRYING any kind of Material or Product.

THOUSANDS OF INSTALLATIONS AT WORK.

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Also at MANCHESTER, BRADFORD, BRISTOL, GLASGOW, and BELFAST.



A COMMITTEE FORMED TO ASK THE HOME SECRETARY FOR A PUBLIC REINVESTIGATION OF THE MAYBRICK CASE.

THE discoveries incidental to our analyses of Valentine's Meat Juice—1st—That entirely unsuspected by the persons concerned with the trial of Mrs. Maybrick, commercial glycerine on sale throughout the country contained more arsenic than was discovered in the post-mortem upon James Maybrick; 2nd, That Valentine's Meat Juice, instead of being the nourishing food the medical men believed it, was almost devoid of nutritious properties, containing less than one per cent. of gelatine and albuminoids. 3rd, that James Maybrick was a confirmed arsenic eater, and that the poison discovered in the post mortem was no more than might be present in the system as a residuum of arsenic eaten by Maybrick prior to his illness. 4th, the fact that there was not a particle of medical evidence to support Dr. Stevenson's view that the minute quantity of arsenic discovered at the post mortem could have occasioned James Maybrick's death even had it been administered by Mrs. Maybrick, but that on the contrary the ablest experts on the action of poisons, Drs. Meymott Tidy and Rawdon Macnamara, proved conclusively, subsequent to the trial, that there was no scientific evidence whatever to support Dr. Stevenson's assertion that James Maybrick died of arsenical poisoning, but that the symptoms pointed entirely away from poison as the cause of death—these amongst other weighty reasons have determined us to accede to the request contained in the following letter, to act as a medium for obtaining signatures to a requisition to the Home Secretary to cause a public reinvestigation of the Maybrick case to be made.

SIR—The article in your issue of the 13th ult., in which you say "there is every circumstance pointing to the fact that James Maybrick did not die of arsenical poisoning, and that his widow is suffering, innocently, a terrible punishment," ought not to be passed unnoticed. You have given voice to a feeling which is very widely entertained in all parts of this country, and which ought to be set at rest—in the only way it can be—by a public reinvestigation of the case. You exactly state the position when you say, "The whole case is so terrible and so unsatisfactory in its medical, chemical, and legal aspects, that it ought to be re-investigated."

Such a question as, whether there is an innocent woman in an English prison ought not to be passed unnoticed. It is a matter which ought to be fought in the open, and fought vigorously. This woman's trial which occurred more than four years ago caused, to quote a recent observation of one of your contemporaries, "a storm of public criticism on criminal law and procedure" such as has rarely, if ever, been witnessed in this country, and from that day to this that storm has never been really allayed, and to this day, notwithstanding the lapse of four years, there are probably very few people in this country who would be prepared to stand up openly and answer affirmatively, and without some lingering sense of doubt, the question, "Did Mrs. Maybrick poison her husband in 1889?" That question has been shirked, but it remains an open question to this day among a very large portion of the community, and so long as that woman is undergoing the horrors of penal servitude for life in the midst of us, that question ought not to be shirked by any person who entertains any sort of doubt about her guilt. To repeat your words, and they cannot be repeated too often, "The whole case is so terrible and so unsatisfactory in its medical, chemical, and legal aspects, that it should be re-investigated."

What you say is supported by the opinion of three of the most able men of the Bar of England—Sir Charles Russell, Q.C., Mr. Moulton, Q.C., and Mr. Poland, Q.C., who after a thorough consideration of the case recorded as their formal opinion:—

"There are many matters stated in the case, not merely with reference to the evidence at, and the incidents of, the trial, but suggesting new facts which would be matters for the grave consideration of a Court of Criminal Appeal, if such a tribunal existed in this country."

There is no Court of Criminal Appeal in this country, but there is a woman in a prison in this country, as to whose guilt there is a doubt. "Conscience does make cowards of us all," and those who entertain doubts about this woman's guilt seek shelter, when leaving her to her fate, behind such excuses as that she was found guilty by a jury, and there is no Court of Criminal Appeal. The mere fact, however, that there is no Court which can reconsider a verdict of a jury in a case of felony throws a common duty on all who entertain doubt as to the justice of the verdict to demand (if the woman herself desires to undergo such an ordeal), that the Government should provide a public re-investigation of this case, not merely as an act of justice to this woman, but that, in the public interests, it may be ascertained who are the persons who are responsible for a miscarriage of justice, if one has occurred.

Your dealing with the chemical aspect of the case has brought to the notice of the public that James Maybrick's medical attendants gave him as nourishment such things as Valentine's Meat Juice, which you have shown by analysis contains well nigh no nourishment at all, and that the evidence of the medical men who made the post-mortem examination being that "the actual cause of death was exhaustion." That that exhaustion was possibly, if not probably, the result of starvation, and not of arsenic at all. At the time of this woman's trial no one for a moment supposed that medical men who prescribed such things as Valentine's Meat Juice as food for sick persons, were ignorant of the fact that it contained almost no nutriment whatever. But at a re-investigation of this case the fact which you have brought to light will have to be considered, and the analysis given of the various foods, Valentine's Meat Juice, Neaves' food, and Revelenta Arabica, which James Maybrick's medical attendants (utterly unaware, as you have shown them to be, of the constituents of the foods they prescribe) gave to him, and the question which you have raised as to whether the "exhaustion" of which the man died was not the result of starvation, will have to be disposed of.

But apart from the medical aspect of the case, you have brought to light a matter concerning the chemical aspect of the case, which is of even greater importance to the question "Did Mrs. Maybrick poison her husband?" than even the medical question of the cause of death. Mr. Matthews, as Home Secretary, advised the Queen—after "taking the best medical and legal advice that could be obtained"—that the evidence left "a reasonable doubt whether the man's death was, in fact, caused by the administration of arsenic," but that "the evidence leads clearly to the conclusion that the prisoner administered, and attempted to administer, arsenic to her husband with intent to murder," and part of that evidence which Mr. Matthews says "leads clearly to that conclusion" was that arsenic was found in some glycerine which it was said had been given by Mrs. Maybrick to the nurses so that they administered it to her husband. Mr. Davies, the Analyst, had detected two-thirds of a grain of arsenic in a pound bottle of Price's Toilet Glycerine, which had been found at Maybrick's house, and the question how that arsenic got into that glycerine was answered at the trial by the theory of the prosecution that Mrs. Maybrick had put it there, and as you say it was "utterly unsuspected by any one concerned in the case," that glycerine often contains a larger proportion of arsenic than Mr. Davies found in the glycerine at Maybrick's house. You have brought to light the facts that a short time prior to James Maybrick's death Messrs. A. Bird and Son, of Birmingham, had refused a consignment of glycerine "made in Germany" because they had found on analysis that it was infected with arsenic—and you have now brought forward the

fact that Mr. Fairley, the Public Analyst for Leeds, has reported that of the samples of glycerine submitted to him for analysis during the quarter ending December, 1893, five out of eight of them contained "appreciable quantities of arsenic," and to this you might have added that Siebold, at the Pharmaceutical Conference at Newcastle-on-Tyne in 1889, gave as the result of his experiments on Toilet and Pharmaceutical Glycerines that "the majority showed presence of arsenious acid As₂O₃ varying from 1 in 4,000 to 1 in 5,000," so that when Mr. Davies only obtained two-thirds of a grain in the 7,000 grains of the pound bottle found at Maybrick's house, he obtained a far less quantity than Siebold did in the majority of his experiments with toilet glycerine.

No one, as you say, at the trial suspected that glycerine contained arsenic, and consequently, when it transpired that Mr. Davies had found some in a bottle at Maybrick's house, the prosecution propounded the theory that Mrs. Maybrick had put it there.

This theory formed part of the evidence upon which Mrs. Maybrick was found guilty of having poisoned her husband, and upon which Mr. Matthews advised the Queen that it "leads clearly to the conclusion that the prisoner administered and attempted to administer arsenic to her husband with intent to murder." But in face of the facts which you have brought to light, and which were never thought of at the trial, I will venture to say that a wilder or more ridiculous theory of a prosecution was never propounded in a Court of Justice, and that it could not possibly be propounded at any public reinvestigation of the case. The evidence relating to this glycerine incident of the case has passed from the public memory, and I will ask you to allow me to supplement what you have said by recounting it. The only evidence given at the trial about it was:—that of the policeman, who found among other bottles in the lavatory a bottle of Price's Glycerine, which he handed with other things to Mr. Davies, the Analyst: that of Mr. Davies, who said that the police had handed him some 250 bottles of medicines and foods which had been found at Maybrick's house and office, and that he had detected traces of arsenic in four of them, one of which was a freshly opened bottle of Price's Toilet Glycerine, containing 7,000 grains of glycerine, that he had examined 1,000 grains of it, and in that quantity had detected about one-tenth of a grain of arsenic, "and that assuming the arsenic to be evenly distributed, there would be two-thirds of a grain of arsenic in the whole bottle. That is all Mr. Davies could say about it. It does not appear to have occurred to anyone to ask him whether Mrs. Maybrick or he or anybody else could have "evenly distributed" two-thirds of a grain of arsenic in 7,000 grains of such a substance as glycerine? or how it could be "evenly distributed," except in the process of manufacture, or by the action of time? All he could say about it was that he had detected this arsenic in this glycerine, and all that anybody at the trial could suggest was that Mrs. Maybrick must have put it there. Then there was the evidence of Nurse Gore, who said that the night before the man died she wanted to moisten his lips, and asked Mrs. Maybrick for some glycerine, who gave her a bottle of it out of the washstand drawer, that the nurse took a spoonful of it and mixed it with some borax in a saucer, and moistened the man's lips with this mixed glycerine and borax. This is all that Nurse Gore could say about it; and that completed the whole evidence given at the trial about glycerine. There was no evidence given that the bottle found in the lavatory was the same bottle as that which Mrs. Maybrick handed to the nurse out of the washstand drawer, and there was no evidence that there was any arsenic in the saucer of mixed glycerine and borax which the nurse had used to moisten the man's lips with.

Mr. Justice Stephen summed up this evidence in these words—and although I am conscious that I am asking you for exceptional space, I will ask you to allow me to drive this nail home by quoting it as an illustration of the way in which the most learned judges—and Mr. Justice Stephen, we were told by the London Press is a most learned judge—deal with matters which involve chemical questions. He told the jury—and let those of your readers who are chemists and have read what you have brought to light about the constituent part of glycerine, say what they think about it—that if arsenic is found in glycerine "it is certainly a very shocking result to arrive at." This is what Mr. Justice Stephen told the Liverpool common jury o.

plumbers and farmers about the glycerine incident in the Maybrick case. "Then you get to the blue bottle which contained glycerine. That glycerine was found in the lavatory outside, and if the bottle were filled and the same proportion of arsenic added, there would be grds. of a grain of arsenic in it. You have heard that his mouth was moistened with glycerine and borax apparently the night before he died, if that is so, and the glycerine be really poisoned, it is certainly a very shocking result to arrive at."

"Sir Charles Russell—I think the evidence of Nurse Gore is that the bottle that was used on the night before death was taken, not from the lavatory but from the cupboard on the washstand."

"His Lordship—It does not follow that that was the same bottle. One does not know the history of that bottle or where it went to. It may or may not have been the glycerine which was used for the purpose I have mentioned, namely, for moistening the lips—But what does appear in the case is, that a bottle was found in the lavatory and that it contained two-thirds of a grain of arsenic and that his mouth was moistened with glycerine and borax during the night in question, but the identity between that bottle and the bottle which contained the arsenic is not established and is not proved."

I have not wasted your space in quoting this. It is an illustration which every reader of your periodical will appreciate, of the way in which learned judges direct the intelligence of common juries in chemical matters, and I will venture to prophecy that there is not a chemist among your readers who will not say that "it is certainly a very shocking result to arrive at," that the lives of persons accused of crime should be exposed to the risks of a trial conducted in such a way.

The Maybrick case as you say "is so terrible and so unsatisfactory in its medical, chemical, and legal aspects, that it should be re-investigated." The woman herself is penniless, friendless and voiceless. Her cause is made the sport of the alternate whinnies and scoldings of a tribe of persons who occupy themselves with contributing anonymous paragraphs and letters to the newspapers about her pedigree or nationality, or youth or health or prison treatment, which has repelled public interest in the case, and brought those who espouse it into ridicule and contempt. The woman herself knows and can know nothing about all these personal paragraphs. She is deserted and left to her fate, but the case as you say—and I would like to see your words repeated and reiterated a thousand times—is "so terrible and so unsatisfactory in its medical, chemical, and legal aspects that it should be re-investigated," and I will make this suggestion to you, and it is one which I think every person who reads your paper will adopt—that you should receive the names of those who are prepared to make a requisition to the Government to hold, if the woman herself desires it, a public re-investigation of this case. The result of your exposures of the chemical blunders that were committed at the trial has been that upwards of twenty people of responsible positions (a list of whose names I enclose) have written to me (not knowing, so friendless and deserted is this woman, to whom else to write), suggesting that a committee should be formed for the definite purpose of applying to the Home Secretary, for permission for its representative to have an interview with Mrs. Maybrick and ascertain from her whether she desires to face the ordeal of a re-investigation of her case, and if she does to appeal to the public to demand of the Government that they should in some way provide that there should be one—as according to the opinion of Sir Charles Russell, Q.C., Mr. Moulton, Q.C., and Mr. Poland, Q.C.—our Courts are impotent to afford any relief even in a case which they consider would require the grave consideration of a Court of Criminal Appeal.—Yours faithfully,

Oakhurst, Blackheath, S.E.

ALEXANDER W. MACDOUGALL.

[The Editor of FOOD AND SANITATION would be pleased if those who believe this most unsatisfactory case ought to be reinvestigated will forward him their signatures to the requisition on opposite page. He would point out that signing this requisition does not commit anyone to the opinion that Mrs. Maybrick is an innocent woman, but that, judged by the light of discoveries made since the case was tried, there are grave doubts that a terrible error has been made, and that humanity, justice, and public interest render it necessary that a calm, dispassionate, re-investigation should take place.]

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Food and Sanitation.

SATURDAY, FEBRUARY 17TH, 1894.

AN INQUIRY INTO THE MERITS OF BUTTER
SUBSTITUTES *v.* BUTTER.

HITHERTO the belief in England has been that it is the vendor of butter mixtures and of margarines who plunders the public. The revelations, therefore, in various part of Ireland, at Manchester, Bolton, Skipton, etc., come as a rude shock, disclosing as they do the fact that the very persons who vehemently demand the suppression of the sale of margarine and butter mixtures, and clamour for special legislation that margarine should be coloured pink or blue, are themselves not only guilty of adulteration in its meanest and most artful forms, but that by their own admissions they are defrauding the English public who buy their butters of about £500,000 per year. It would be hard to find anything better calculated to inspire disgust in all right-minded persons than these shameful revelations, which prove that the butter merchants who, with one hand draft bills to make it compulsory that margarine should be coloured pink, with the other hand adulterate their butters with that margarine they are never weary of denouncing, and that they have perfected a system of swindling the public of 1d. to 1½d. per pound upon every pound of salt butter they produce, by selling at *butter price water made to stand upright*. Nay, worse, in defiance of truth and of scientific knowledge, they declare the butter cannot be made with less than 20 to 24 per cent. of water in it. We have gone a long way with the movement to encourage native dairy farming, but we are not amongst those who will lie for it, who will aid shoddy patriots to, "with tongue i' th' cheek," swindle grocers and the English public. The time has arrived when a firm stand must in the public interest be made against the gigantic swindles that honeycomb the butter trade. We demand that margarine shall be sold as such, but in making this demand we are by a parity of reasoning forced to also insist upon butter being sold as such. As to giving to margarine a pink or other objectionable colour, that is not only an absurdity, but beside the question, for if it be wrong to colour margarine it must be equally

Fretful
Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates *extracted* from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers and that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., ½-lb. sample in handsome enamelled box sent free, on receipt of 3d for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

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wrong to colour butter, yet there is very little butter sold that is not artificially coloured the same as margarine is. As we believe in accepting no statements upon hearsay, we resolved to make an independent series of investigations into the relative degrees of purity of butters, margarines, and mixtures at present publicly on sale in England.

If the results be contrary, as we are bound to admit they are, to our wishes and expectations, we cannot avoid the looking of them straight in the face and accepting the consequences of the verdict. Two things they certainly indisputably prove—first, that whatever dishonesty there is in the butter trade is not practised by the margarine manufacturers, but by butter producers or vendors; second, that it is disgraceful to all concerned with the Irish butter trade, not only that they cannot produce as good or as honest an article as their Danish competitors, although they possess advantages in cattle and pastures, but that they do not produce as honest, as healthful, or as eatable an article as first-class mixtures like, for example, Le Dansk. It is only a week ago since the mayor and magistrates at Limerick dismissed summonses against Irish butters that contained 21.55 per cent. of water. In their work upon "Butter: Its Analysis and Adulterations," Mr. Arthur Angell and Mr. Otto Hehner, the two most noted experts upon butter analysis, said "Good and carefully-prepared butter should not contain more than 10 per cent. (water), and it can easily be made with much less."

"As an absolutely valueless constituent," say these experts, "it should be squeezed out as completely as possible during the preparation of the butter. The buyer and consumer of butter intends only to purchase the fat, and should, therefore, never get a large proportion of water, paying the same price for it as butter." Yet this is exactly what the butter buyer does get, as will be seen by a comparison of the following analysis:—

	Water.	Salt.	Fat.
A North of England Co-operative			
Irish butter at 1s. 2d. per lb. ...	18.46	4.15	74.48
A South Co-operative Society's butter,			
1s. 2d. per lb. ...	17.39	3.65	76.24
La Dansk butter substitute, 11d. per lb. ...	10.80	1.28	86.54
Danish butter, 1s. 4d. per lb. ...	13.29	1.30	83.98

An examination of these analyses leads us to some curious conclusions, which, to our surprise, are precisely the opposite to what we anticipated and what is generally believed by the public. No doubt if all people could afford to buy the best qualities of butter fresh from the dairy, one would give fresh dairy butter the preference over other butters or margarines, but everyone cannot afford to pay 1s. 5d. or 1s. 6d. per lb. for butter, and it is just as well that the public should know that unless they buy their butters straight from the dairy the chances are that they are eating margarine or mixtures and paying butter price for them. Why this is the case will be readily seen when we mention that public analysts dare not condemn admixtures of margarine in butter below 10 per cent., and as every butter merchant knows this, it has come about that there is very little of what is guaranteed to be genuine butter that does not contain some margarine, the

latter being the cheaper article and enabling the butter merchant by its use to swindle the consumer of some 5s. per cwt. The best Brittany butter makers, for instance, guarantee their product pure butter, but margarine has been traced from Holland to their factory gates. It has never been found to come out as *margarine*, and there is only one inference to be drawn from this fact, viz., that it is mixed in small percentages with butter and sold as butter. Such being the fact, and really pure butter being practically unobtainable, it is just as well that the situation should be thoroughly understood, and as every person *volens volens* eats more or less margarine, we will at the outset consider exactly what margarine is. There is a general belief, which we must allow also influenced us, that margarine is made from inferior fats, but our own recent inquiries convince us that such statements are untrue as regards English-sold butter mixtures, the samples of fats used for these mixtures which we have examined here and in Holland being, without exception, wholesome and excellent. No one considers the fat on a joint of beef as something vile, and it therefore seems strange that the same healthy fat when blended with butter and sold as a butter substitute should arouse so much hostility in many quarters and be looked upon as a disgusting article of diet. The very persons most prone to turn up their noses at this article of diet are those who unknowingly eat it daily at hotels and restaurants, and consume it in their own houses under the full belief that it is butter. Thus Mr. Otto Hehner, who has a larger acquaintance with analysis of butter than any other food analyst, says:—

"In the summer months, when butter is cheap, there is little adulteration; but as the winter comes on it pays to mix it with margarine, which can be bought for sixty shillings the hundred-weight, while good, genuine butter costs from a hundred to a hundred and thirty shillings. In analysing butter for the trade, I found that in November 55 per cent. of the samples were adulterated, in February 54 per cent., and in March 68 per cent. It all arises out of the mania for cheapness. I have known the butter coming from a Continental country to be perfectly pure. Suddenly, in response to demands from the buyers for a reduction in price, one or two men would undersell their competitors by, say, a half-penny a pound. They did this, of course, by mixing the butter with a margarine. The result was that in a few days the whole country-side followed their example, and the English market was inundated with adulterated butter. The scandal of this is that the butter buyer is defrauded of 2d. to 6d. per lb. which he pays extra for an article that he believes is pure butter, but which in point of fact invariably contains 10 per cent. of margarine, and often as much as 40 or 50 per cent., as has within the past fortnight been found to be the case with supposedly pure Ostend butters. This is reckoning only the adulteration practised by butter producers, and leaving out of the question that practised by grocers themselves. How extensive this is may be judged from the fact that there are at present over 120 blending machines for adulterating butter with margarine, working within a six mile radius of Holborn. In the light of these facts and our investigations, we are led to the following conclusions:—

1. That first class mixtures of margarine and finest butter are better for eating than any but the very finest dairy butters, whilst they are at least 6d. per lb. cheaper.

2. That whilst purchasers of ordinary Irish salt butters, such as those analysed by us, and the butters that formed the subject of the Manchester prosecution, pay better price for water—which is often as much as one-fourth part of each pound purchased—high-class mixtures, like, for example, Le Dansk, are at least 3d. per lb. cheaper in nominal retail price, whilst actually they are nearly 5d. per lb. cheaper. They are, moreover, really better, more wholesome, and altogether preferable as an article of diet. How this comes to be we shall see by examining the figures of the analysis given above. We find the co-operative store Irish butter at 1s. 2d. per lb. contained only 74.48 per cent. of fat, whilst Le Dansk contained 86.54 per cent. of fat. In this respect, therefore, "Le Dansk" has 12.06 per cent. more fat than the Irish butter in question. In fat per centage value, if the North of England Co-operative Irish butter was worth 1s. 2d. per lb. Le Dansk was fully worth 1s. 3½d. per lb. But it may be urged that the fat in the Irish butter in question was of a superior quality—that, in plain words, the fat in the Irish butter being butter fat was superior to the fats in Le Dansk, the latter being a mixture of selected beef fats and finest butter. Upon this question we have made some experiments, our object being to determine in what respects, if any, the fat obtained from the milk of an animal is superior to the fat obtained from the flesh of the animal itself. Thinking that probably the fat globules in the butter might be more readily attackable by the gastric juices—i.e., more miscible, assimilable, or digestible we made experiments in this direction. Meyer (Ch. Soc., xlvii., 1872) alleges that *margarine is but slightly less nutritious than genuine butter*. Professor Atwater notes "*how closely well-made margarine agrees in chemical composition, digestibility, and nutritive value with butter from cow's milk*;" whilst Dr. S. B. Sharples, in his fourth annual report to the Massachusetts Board of Health, says of oleo: "it is inferior to the best butter, but much superior to the low grades of butter." Dr. Sharples states as the result of his investigations that a: "*good deal has been said in regard to the poor grade of fats from which the oleomargarine is made. Anyone making such assertions in regard to the fats is simply ignorant of the whole subject. When a fat has become in the least tainted it can no longer be used for this purpose, as it is impossible to remove the odour from the fat after it has once acquired it.*"

A pure oleo fat being thus but *slightly* less nutritious than genuine butter, i.e., cent. per cent., it follows that a mixture like Le Dansk containing a notable proportion of finest butter with 86.54 per cent. of fat as against 74.48 per cent. of fat in the Irish butters must be pound for pound more nutritious, containing as it does so much greater a percentage of fat. Contrasted with the Danish butter this mixture is shown to contain 2.49 per cent. less water, and 2.56 per cent. more fat, yet the Danish butter costs 1s. 4d. per lb. and the Irish 1s. 2d. per lb., whilst Le Dansk, with its more honest water percentage and higher fat value, sells at 11d. per lb., and in odour, taste, and texture equals the finest natural butter we have examined. These facts raise a serious question for butter producers. If butter substitutes are more valuable as nutrients than natural butter, and more honestly made, it will be necessary for butter-makers to bestir themselves if they wish to successfully compete with the butter substitutes.

So far as experiments to determine the relative digestibility of Le Dansk with the finest butters could be carried out, they showed that Le Dansk was more miscible than the butters or other mixtures and margarines. The results obtained by A Meyer (*Landwirthschaftliche Versuchsstation II.* p. 215.) went to show that by feeding human beings for three days on butter and on oleo-margarine he found that 1.6 per cent. less of the latter was absorbed than of the former, and he inclined to the opinion that with healthy persons this proportion is so inconsiderable that it is of little or no importance. Our own investigations showed that Le Dansk was actually more miscible than any of the other samples analysed and experimented with. This, however, may be accounted for by the process of manufacture, which is different from the other preparations offered as butter substitutes. Here it might be well that we should speak of the character of the premises we have visited in which the manufacture of margarine and butter mixtures is carried on. Mr. Battershall, F.C.S., chemist, U.S. Laboratory, New York, is responsible for the statement that "absolute cleanliness is a *sine qua non* in the successful manufacture of margarine." Our own examinations of oleo as imported at Rotterdam; of the factory methods of working in Holland, where it might truly be said that everything is so clean that, to use a Yorkshireism "one might eat his dinner off the floor"; and of the manufacture of Le Dansk butter substitute at Southampton, corroborate Mr. Battershall. Le Dansk from start to finish is untouched by hand. But prejudice is hard to slay, and the constant reiteration of statements that the beef fat used for margarine is the refuse, sweepings, etc., of abattoirs, may leave some doubts in many minds, despite Mr. Battershall and Dr. Sharples' researches, that objectionable fats chemically treated can be used for margarine or butter mixtures. So far as Le Dansk is concerned, we are compelled to admit that any such doubts are entirely devoid of foundation, inasmuch as the manufacturer has by contract the selected fats from cattle slaughtered at the Paris abattoir for his manufacture. Those who know the rigorous nature of the food laws in France, and the abattoir system—which, since Dickens years ago so powerfully contrasted it with our own, we have done very little to emulate—will understand that fats so selected must be above suspicion. We sincerely wish we could say the same as to the cleanliness accompanying butter, making in England and Ireland, but neither threatened bankruptcy nor loss of trade seem to wean many of our dairy farmers from dirty, slovenly methods. The public analyst for Cheshire, Mr. J. Carter Bell, not long ago reported that (*vide Local Government Board Report, 1892*), "milk sometimes reaches him not with the sweet country odours one associates with the meadows and the flowers, but rather with odours more connected with garbage and filth." He says:—"This is not to be wondered at when one sees the rotten manure heaps piled up close to the milk sheds. It is a well-known fact that milk readily absorbs odours. The flower farmers of France avail themselves of this absorptive property, and one of the early processes in the preparation of their delightful perfumes is to bring the fresh flowers laden with their rich odours into contact with fatty substances, when the latter absorbs the sweet odours pertaining to the flower, with results satisfactory to all concerned. Not so, however, when the English farmer, through ignorance and carelessness, repeats the process of the French flower farmer, only in his case substituting for the sweet-smelling flowers the foul-smelling manure heap, the *modus operandi* being identical, the milk acting as an absorbent, and transmitting, not only the objectionable odour, but other, and in many cases more serious, dangers. The technical educator cannot too strongly impress upon the rising generation of farmers to "wash and be clean."

Milk and butter produced under such conditions cannot be other than dangerous, but not content with the manure heap, those who ask us to support fraudulently watered Irish and English butters go farther, they designedly leave in their butters for swindling purposes from 10 to 25 per cent. more water than the said butters should contain. Thus the Cheshire public analyst has come across butter that contained 38 per cent. of water of which, he says, "*the chief use of the butter fat was to hold the water and salt together, for the water and salt constituted 50 per cent. of the mixture.*" After keeping this precious butter "for a fortnight, 18 per cent. of the water and salt had run out." If we examine the salt percentages in the above analyses we find one Irish butter has 4.15 per cent. of salt, another 3.65 per cent., whilst Le Dansk and Danish butter contain but 1.28 per cent. and 1.30 per cent. respectively, Le Dansk being the lower.

Now, salt is not worth the price of butter, nor is water, and whether these heavy percentages be left in designedly for im-

posing upon the consumer or through ignorance, the fact remains the same, that nearly a fourth of these Irish butters consists of salt and water. In the Manchester cases prosecuted, it may be remembered that the contention of the Irish butter factors was that butters honestly made could contain 25 per cent. of water. The usual 4 per cent. of salt in Irish salt butters raises the percentage of salt and water, for which butter price is paid to 29. Now, if we compare this with a high-class substitute like Le Dansk, we find that Le Dansk sells at 11d. per lb. and contains 12.06 per cent. more fat than one of the Irish butters in question, and 10.30 per cent. more fat than the other, thus giving Le Dansk an increased value; but, further than this, it contains 7.66 per cent. less water than the one, and 6.59 per cent. less water than the other, whilst it has 2.49 per cent. less water than the finest Danish butter analysed. The Irish salt butter factors have therefore to face the fact that they ask 1s. 2d. per lb. for butters containing but 74.48 per cent. of fat, and 22.61 per cent. of salt and water, whilst more nutritious, equally assimilable, and cleaner butter substitutes, like Le Dansk, containing 12 per cent. more fat, and 12.53 per cent. less salt and water, are sold at 11d. per lb., and that they are superior in flavour, manufacture, and keeping properties to the butters they are so rapidly displacing; that, in plain words, if the Irish butters in question are worth 1s. 2d. per lb., Le Dansk is worth 1s. 5½d. per lb. instead of 11d. These facts ought surely to open the eyes of those who by carelessness and dirty manufacture, excess water, and the like, have well-nigh disgusted the English public with Irish butters, to the knowledge of the stern truth that if they are to sell their produce in our markets it must be much improved, and that immediately. It is alleged that finest Danish, Brittany, English, and Irish dairy butters have a decided superiority in the *bouquet*; but in this Le Dansk in many cases is their superior, whilst the average low-priced, adulterated, indigestible, partially decomposed, and rancid article so generally sold at 1s. to 1s. 2d. per lb. as butter is far inferior. The mixture has in addition the added advantage that it contains a smaller proportion of Curd, and is therefore less liable to the fermentative action which sets up in butter and terminates in the liberation of the acid that causes rancidity.

For cooking purposes a preparation like Le Dansk must of necessity be manifestly superior to butter, because it contains not only a higher percentage of pure fats giving no rancid odour in melting, but much less water; whilst from the smaller amount of curd in it, and the fact that it does not come in contact with the hand in the manufacture, it will keep sweet much longer than any butter will. These are facts the full significance of which must be grasped by those who wish Irish and English dairy produce to not only hold their own, but gain on our markets. There will always be a demand for finest class butters by those who have a *goût* for the complex odours that are the charm of a really good butter as the *bouquet* is of a wine. It is a deep disgrace to our dairy farming that although England and Ireland possess the finest pastures, own the finest cattle, and make the finest dairy implements in the world, yet Denmark can overrun our markets for finest butter and increase its sale amongst us from 30,000,000 lbs. ten years ago to 90,000,000 lbs. to-day, and that an examination of the Irish butters largely sold in this country to-day should reveal the shameful, humiliating truth that they are not as honest, as wholesome, or as well made as the very mixtures Irish butter-makers seek to prohibit the sale of.

If anything ought to rouse the lethargic incapables who rule or advise our Board of Agriculture to activity, it ought to be truths like these.

We warned the Irish butter merchants against defending the excess water fraud, but they insisted on the practice. They could discover no surer way of cutting the throat of the Irish butter trade, and we doubt if they yet realise the fatal consequences of their knavery and folly.

(To be continued.)

ANOTHER GINGER PROSECUTION.

At Harlesden Petty Sessions on February 8th, before Messrs. Bird, Burke, Pownall, and Major Wilkinson, John Webb, of 37, Victor-road, Kensal Green, was summoned by Inspector Watts, Middlesex County Council, under the Food and Drugs Act, for selling ginger not of the quality and substance demanded, but from which the essential constituents had been abstracted. The inspector said he purchased 2 oz. of ground ginger on the 3rd inst. at defendant's shop, and produced certificate showing the essence had been removed. Mr. Bird: Did you have it in your shop a long time? Defendant: Yes, about twelve months. Mr. Bird: In a stoppered bottle? Defendant: No; in a tin. Mr. Bird: Yes; it has exhausted its power. The inspector tried to convince the Bench that the ginger had been used for the manufacture of ginger-beer, dried and ground. The Bench could not be convinced, and advised defendant not to keep ginger so long another time. Fined 1s. Inspector Watts: And costs? Mr. Bird: No.

THE FOOD SUPPLY OF BLACKPOOL AND SOUTHPORT.

SOME months ago we had occasion to comment severely upon the fact that the Food and Drugs Acts were not enforced in either of the above towns. As a result of our comments a few samples were taken for analysis at Blackpool, and we were assured that a most energetic effort was to be made at Southport.

We have heard nothing of the Acts being enforced in either town for months past. The following cases at Blackpool arose out of prosecutions incidental upon our exposures of how adulteration flourished in that town:—

A BUTTER CASE.

At Blackpool County-court on Wednesday, Knappton Fulton provision merchant, Burnley, sued William Talbot, grocer, Great Marton-road, for £11 for butter supplied; £1 had been paid into court, and there was a counter-claim for £10 for breach of contract. The amount claimed by plaintiff was the balance of an account. Defendant wrote to plaintiff to say he had been summoned at the Blackpool Police-court on November 13 last for selling the butter he received from plaintiff, which was found to contain an excess of water, and ordered to pay the costs, amounting to £2 17s. 9d. Defendant also stated that he was issuing a writ for damages against plaintiff for injury to his business consequent on the summons. Mr. Blackhurst, solicitor, who appeared for Mr. Talbot, said his client ordered butter, and it was written in the order book as butter, but after leaving the defendant's shop the entry was altered. His Honour said plaintiff had had notice to produce this book, and chose to leave it at home, which was a proceeding he would not tolerate. Mr. W. J. Read, solicitor, said he was in another case representing Mr. James Fielding, grocer, Foxhall-road, Blackpool, against Fulton, and had given him notice to produce the order book. He had supplemented the notice with a letter. His Honour adjourned both cases, plaintiff to pay the costs of the day in both actions.

The amount of care taken to ensure a pure food supply for Southport may be gleaned from the fact that the Health Committee of the town met last week, when a letter from the Borough Analyst was read, in which he stated that during the past year ten sampler only had been submitted to him for analysis, and that during the same period Wigan had submitted 198. It was resolved that the inspector of weights and measures be appointed the officer to procure, under the direction of the medical officer of health, samples of foods and drugs for analysis. We shall be curious to see if this resolve be a genuine one. Only ten samples in a year for a borough like Southport is not only scandalous but a direct encouragement to fraud, and grossly unfair to vendors of genuine articles.

HORLICK'S
MALTED
For Infants
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CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

DISEASE AND DISINFECTANTS.

"THE penny wise pound foolish" adage is exemplified in nothing so much as disinfectants. Year after year Vestries, Town Councils, and Local Boards are being defrauded of large sums, paid for what can only be described as "murderous rubbish." That Local Authorities continue to use disinfectants which Medical Officers and Surveyors—unless they are woefully ignorant or negligent of their duties and the interests of their employers, the public—should know are spurious or fraudulent, is in more than one sense a grave scandal, because the lives of the community are endangered for what there is too much reason to believe to be the meanest and most degrading of considerations, viz., the fact that the manufacturers of the spurious disinfectants make it worth the while of the responsible officials to wink at the swindle. Upon no other ground is it possible to explain the manifest unwillingness of so many responsible officials to have the disinfectants, that are bought under their advice, analysed. Upon no other grounds can it be explained why it happens that when the manufacturers of a spurious article are found out the scandal is hushed up, instead of a prosecution for fraud being instituted. It is not a long time ago since we brought before the Board of Trade one terrible instance of the use of a swindling so-called carbolic that we analysed and found to contain no carbolic whatever. We proved that typhoid excreta buried with this trash had polluted subsoil wells, causing 50 other outbreaks of typhoid and five deaths. It will be fresh in our readers' recollection that we proved by analysis that important sea-ports right in the face of threatened cholera were using carbolic guaranteed 8 per cent. but which contained only $\frac{1}{10}$ ths of phenol. Thanks to our exposures, a few Vestries and Boards of Works have caused their supplies of disinfectants to be analysed and the results have almost invariably justified our warnings.

Holborn discovered its 15 per cent. carbolic contained less than 3 per cent. Camberwell has followed suit, with the sinister result that at the last meeting of the Vestry an account came up for payment of £84 3s. 3d. in the name of Adcock, Easton, & Co. for disinfectants. This firm had contracted to supply disinfecting powder containing 5 per cent of carbolic acid. The powder had been analysed by Dr. Teed, and found to contain only a trace of carbolic acid, in fact less than 1 per cent. Mr. Perry moved that the item be referred back to the Committee. Mr. Preston seconded, and Mr. Perry's motion was agreed to.

A preparation of less than 1 per cent. carbolic is practically devoid of germicidal power, and to say the least, this Camberwell revelation ought to rouse members of vestries, town councils, etc., to demand and insist upon analyses of every supply purchased, not only for protection from the dissemination of disease, but because such analyses would save the ratepayers' money. Mr. J. Carter Bell, F.I.C., public analyst to the Cheshire County Council, in a report just issued, refers to another class of disinfectants which gave the following curious results:—

"Two private samples," says Mr. Carter Bell, "may be noticed, though one can scarcely call them to come under the 'Food and Drugs Act,' yet I think they should be included in the latter; I refer to Disinfecting Powders and Disinfecting Liquids: the two samples were of this kind, one was a powder and the other a liquid, the powder was of a beautiful pink colour and said to contain 15 per cent. of carbolic acid. As this was sold in small quantities at the rate of £50 a ton, the real value of which was only £1, and then leaving a profit of about 25 per cent. This pink material was merely finely-powered lime mixed with what are called dead oils from the distillation of tar; there was certainly a trace of carbolic acid, and the powder did possess a certain amount of disinfecting properties owing to the large quantity of free lime which it contained. Any local board could make this powder for themselves by simply grinding the caustic lime with the tar oils. The disinfecting liquid did not even possess the slight antiseptic power of the above powder, but was sold at more exorbitant price, for this solution only contained 1 per cent. of

sulphate of iron, with a mere trace of copper; this nostrum was sold for one shilling a pint bottle, and as sulphate of iron can be bought in the open market for about twenty-five shillings a ton, and one pound weight, which would not cost one farthing, would make one hundred bottles of this disinfectant, which on being sold for £5, leaves a very respectable profit for all concerned. I would not dwell so much upon this latter if it had been really a good antiseptic and fairly worth its selling price, but I have performed so many experiments with this sulphate of iron, using large quantities, and have found it very unreliable; it is a deodorizer, but cannot be called a destroyer of micro-organisms. Though this subject does not come under the Food and Drugs Act, yet it does belong to public health, and that is my reason for introducing these two samples, so that local boards throughout the county may be on their guard in purchasing disinfectants. It cannot be too widely known that some disinfectants which are sold under fancy names at very high prices are almost worthless as regards their germicidal powers."

It is a very dangerous thing that scores of such useless swindles are offered under all kinds of fancy names to the public, and although it may be too much to expect that the private individual may be saved from the wiles of fraudulent manufacturers, it is surely not asking too much to demand that supplies used by the public bodies should be tested and be known to be really effective and above suspicion, seeing that it is a matter of such vital importance to the public health.

ALUM IN BAKING POWDER.

Messrs. Collett, Dodds, & Co., 221, Shoreditch, write the following straightforward letter upon this question:—"Although its sale is perfectly legal according to the decision given, is not the question of honesty rather more a matter of conscience for the individual himself? seeing the bulk of the evidence adduced went to prove it injurious rather than otherwise. As sellers of alum, we have naturally no wish to interfere with its sale, but would much like to know why its presence is illegal in bread and not in baking-powder? Surely this requires alteration if our laws are to be consistent."

ENFORCING THE ACTS AT CUPAR-FIFE.

At Cupar-Fife Sheriff-court, Alexander Currie, grocer, Thornton, was charged with having sold to Alexander Duthie, sanitary inspector, Martwick, margarine not duly marked as provided for in the Act. Accused pleaded guilty, and explained that he did not know the provisions of the Act, and that there was no intention to sell the article as anything else than margarine. The Prosecutor said the object of raising the prosecutions, of which there were several, was simply with the view of calling the attention of those in the trade to the necessity of adhering strictly to the provisions of the Margarine Act, 1887. There was no suggestion of any intention to defraud. Sheriff Henderson said that everyone connected with the grocery trade was bound by law to make himself acquainted with the provisions of the Act, and he imposed a penalty of 21s. The following were mulcted in a similar sum for a like offence:—Andrew Brown, grocer, Kennoway; James Keay, grocer, Kennoway; and Robert H. McConochie, High-street, Kirkcaldy.

FLIES AND CONTAGION.

FLIES have always been a nuisance, and are also dangerous. Experiments made by Dr. Simmonds, of Hamburg, tend to show that they play an important part in the spreading of cholera. In his first experiment he captured nine flies from the room in which he had made the autopsy of a cholera patient, and enclosed them for 45 minutes in a large flask where they could fly about at their ease, and at which the air in motion could dry up and neutralise the particles of virus adhering to them. Then he introduced each one to a tube containing liquid gelatine, and at the end of two days the "plaques" were covered with colonies of bacillus virgulus. It is all very well to praise the benevolent man who "would not harm a fly;" the pity of it is the fly does not seem to reciprocate these fine feelings!

1/1 PER POUND, AND "AS FRESH AS THE FIELDS."

ARMOUR JOHN M'FARLANE of 113, Shankhill-road, Belfast, is evidently an adept at catchy titles for his wares, but Mr. David M'Master, Inspector under the Sale of Food and Drugs Act, is possibly too prosaic to respect his humour. Mr. M'Master hauled him to Belfast Police-court on the 6th inst., and stated that he went into defendant's shop and asked for a pound and a-half of butter from a lump which was lying on the counter, and which was labelled "1s. 1d. per lb.—as fresh as the fields." The shopman (David Wilson) gave the prosecutor the quantity asked for. Prosecutor then told the shopman that he required the butter for analysis, and divided it in the usual way into three parts, one of which he took to Professor Hodges, whose analysis was produced and handed in, showing 70 per cent. at least of margarine.

One magistrate said this margarine had been sold at 1s. 1d. per lb. for years, and the defendant had made a good profit out of it. He would be for imposing a substantial fine as a warning to others. The other magistrates concurring in the chairman's opinion, a fine of £5 was imposed.

NEW INLAND REVENUE DODGE.

IMPORTANT TO PATENT MEDICINE VENDORS.

AT Durham, on February 1st, Messrs. Mason & Co., of 80, King-street, South Shields, carrying on a branch shop at No. 93, Saddler-street, Durham, were summoned at the instance of the Inland Revenue Commissioners for exposing for sale a bottle containing a tincture of nux vomica, a preparation to be used and applied as a medicine, and which was liable for stamp duty, without having on such bottle a label provided by the Inland Revenue Commissioners, and duly stamped to denote the duty charges. The defendant company was also charged with similar offences in relation to the following medicines:—Tincture of belladonna, tincture of aconite, anti-cholera mixture, and Dr. Gregory's stomachic powder. Mr. E. N. Alpe, barrister, of London, appeared on behalf of the Inland Revenue to prosecute, and Mr. W. H. Oliver, solicitor, Durham, defended.

Mr. Oliver at the outset laid an objection, as under Act of Parliament 52, George III., a prosecution must be commenced within three months of the date of complaint. In this case the complaint was laid on the 29th September of last year.

Mr. Alpe pointed out that that was repealed by Victoria 53 and 54, chapter 21.

Thomas Jameson, officer of Inland Revenue attached to the Laboratory Department, stated that on the 26th September he visited Messrs. Mason's shop in Durham, and the price-list produced was handed to him. On the 28th September he wrote the letter produced, addressed to Messrs. Mason & Co., Saddler-street, Durham, ordering certain medicines, including tincture of nux vomica. He enclosed postal order for 3s. 3d. in payment. On the 29th September his letter was returned, together with medicines ordered, amongst which was the bottle containing tincture of nux vomica. The label wrapped round the bottle, showing for what the tincture was used, was not stamped.

Mr. Oliver pointed out that this prosecution was taken under an Act of Parliament passed in 1802 by a bankrupt Government, which was pressed for millions of pounds, being at that time engaged in a great war. The country was flooded with quack medicines at the time, and the Chancellor of the Exchequer hit upon the brilliant idea of placing a stamp duty on medicines in order to replenish his empty coffers. From this present prosecution it looked as if the Government now wished to raise the wind. The Act of Parliament passed in 1802, the time of George III., was framed to strike at three medicines, namely, secret medicines, patent medicines under the Great Seal, and proprietorship medicines. Now, nux vomica was well known all over the country, and the defendant company did not profess that it was a secret medicine. Neither was it a patent medicine, nor a medicine of which they claimed to be proprietors. Therefore he submitted they were not liable to stamp duty.

Mr. Alpe replied on the legal points of the case, and concluded by pointing out that Messrs. Mason had offered the drug for sale, and had recommended that it was beneficial for the cure of a certain ailment. For doing this they were liable to stamp duty. Had they struck out the recommendation they would not have been liable.

Mr. Collinson: Do you say the simple advertising of any medicine makes that medicine liable to stamp duty?

Mr. Alpe: Yes; if they say that medicine is beneficial for the certain malady for which it was prepared.

The Bench dismissed the case.

Mr. Alpe agreed to take a dismissal also on the cases relating to tincture of belladonna and tincture of aconite, in order that he might, if necessary, appeal against the decision.

The case as to the anti-cholera mixture was next dealt with.

Thomas Jameson stated that he visited the shop on the 26th September, and found a placard on the shop window. On the placard were the words: "Sole agent for the great anti-cholera medicines, prepared from the recipe of an eminent physician, and recommended to be taken on the first appearance of diarrhoea, vomiting, pain in the bowels, etc.; reduced price, 1s. per bottle." Witness purchased a bottle of the mixture in the shop. The label on the bottle stated that the mixture was prepared on the directions of the Board of Health.

Mr. Alpe pointed out that on the placard were the words: "Sole agent for the great anti-cholera mixture." He did not see how they could have a stronger recommendation for a medicine. They professed a sole right to sell a mixture, and recommended it as a cure or preventative for cholera.

Mr. Oliver contended that there was not a single thing, either on the label or placard, in which the defendants recommended the public to use it. The public was left to find out for itself whether the medicine was beneficial or not.

The Bench was of opinion that in this case Messrs. Mason & Co. had rendered themselves technically liable, but this seemed to have been done through inadvertence. They imposed a nominal fine of 5s. and costs.

The next case dealt with was that relating to Dr. Gregory's powder.

Evidence having been given, Mr. Alpe said on defendant's price-list it was stated that the powder was for acidity, loss of appetite, etc. This powder was well known. The prosecution submitted that as the defendants had advertised the powder as being for a certain ailment, they were liable for stamp duty.

Mr. Oliver said this was a very ridiculous case. The Commissioners strained at a gnat and swallowed a camel. He again submitted that they were absolved from all liability.

The Bench dismissed the case.

Mr. Alpe asked the magistrates to state a case for the Queen's Bench Division so that if wanted they could obtain it. This was not simply a question of prosecuting Messrs. Mason & Co., for it affected many medicine dealers, and meant a question of thousands of pounds to the Inland Revenue.

The Clerk: The magistrates consider these are frivolous cases, but they did not dismiss them on that account. They refuse to state a case.

Mr. Alpe: Thank you. Then we know what to do. I will lay the matter before the Inland Revenue Commissioners.

FOOD AND DRUGS ACT WORK IN GATESHEAD DURING 1893.

MR. W. JOURS, Food and Drugs Act Inspector, in his report just issued, states that during 1893, 52 samples were analysed, with the following results:—18 milks, 2 adulterated; 4 condensed milks, all genuine; 5 malt vinegars, all adulterated, one containing no malt vinegar, the others from 74 to 30 per cent. not malt. Four beers, 4 yeasts, and 6 jams, all genuine; 5 lards, 2 adulterated with 12 and 8 per cent. of beef stearine; 4 flours and 2 tinned beefs, all genuine. The vinegar vendors were cautioned, the lard cases withdrawn.

NEW TABLE OILS.

IN Southern Germany for some years past oil has been produced from the beech-nut. It has given great satisfaction, but has not come into general use because the production has been small and the oil has never been pushed on the market. One reason why more has not been done in the production of this beech-nut oil has been the great scarcity of the nut in certain years.

The beech-nut contains but 22.77 per cent. of oil, but when the nuts are plentiful, the ease with which they can be gathered, the fact that there is absolutely no other expense except the pressing, and the good prices that have been received for the oil have made the production of the oil very profitable.

It is only of late that the seeds of the linden tree have been used for the production of oil. According to the report of Dr. C. Müller to the German Botanical Society, this oil has a number of excellent qualities, which would appear to make it certain that the linden seed will hereafter be considered one of the principal sources for obtaining table oil. The linden tree is a regular bearer, so that a large quantity of seed may be counted upon each autumn. The percentage of oil in the linden seed is given at 58. It is maintained that the oil has a peculiarly fine flavour—free from all bitter or aromatic taste—and that it has the appearance of olive oil. It belongs also to the oils which do not evaporate.

Oil made from linden seed will never become rancid. It has no tendency to oxygenate. It will stand a great degree of cold without freezing. Dr. Müller has exposed it to three degrees Fahrenheit below zero without being able to notice any change.—*American Grocer*.

DO COFFEE & TEA FACILITATE DIGESTION?

This question is treated by C. Falkenhorst in a short paper in the *Gartenlaube*, Leipzig, December, which he devotes to a review of the recent experiments of Schulz-Schulenzstein, published in the *Zeitschrift für Physiologische Chemie*, and designed to throw light on this much-disputed question. This paper is reproduced by the *Literary Digest*.

This celebrated chemist prepared from the fresh mucous membrane of a pig an extract which approached very nearly in character to the gastric juice, and first tested it with the albumen of a boiled egg. The operation was completed in eight hours, and 94 per cent. of the substance converted into digested albumen. He then submitted a decoction of tea and coffee, severally, to the action of the same preparation. In the case of the coffee 61 per cent., and in the case of tea 66 per cent. of the albuminous contents was digested, thus confirming the observation frequently made by physicians that boiling materially prejudices the digestibility of albuminous substances.

Treating more particularly of coffee, he observes that it contains several active principles, each of which exercises an influence on the system. The most important of these are: First—Caffein, which raises the activity of the heart, operating, in small quantities as a wholesome stimulus, but as a poison when taken in excess. Second—An aromatic substance, which operates principally on the nerves, acting in moderate quantity as an agreeable stimulus; to this it is attributable the phantasies so frequently experienced as a result of coffee drinking. Third—The coffee bean contains tannin, to which it owes its bitter taste, and this, as is well known, enters into combinations with albumen which materially prejudices its digestibility. These three principal substances vary very much with the method of preparation. If the coffee is simply infused in water at the boiling point, and allowed to cool at once, we get little caffein, a great deal of the aroma, and scarcely a trace of

tannin. If we allow the coffee to boil for a time, the aroma is dissipated, passing off with the steam; we get more caffeine, and the longer it is boiled the more tannin is dissolved out.

These experiments confirm the view generally expressed by physicians, that coffee long boiled prejudices digestion, while a simple infusion facilitates it; but its beneficial action in the latter case is now shown to be due, not to direct chemical action on the albumen present, but indirectly to its action on the nerves of the stomach, promoting the secretion of gastric juice. In other words, its action is physiological, not chemical.

Turning now to tea, he finds its constituents very nearly similar. The tea leaves also contain caffeine (called, also, theine), aromatic substances, and tannin. Consequently in tea, as in coffee, the properties of the beverage depend very much on whether it is an infusion or a decoction.

The problem is very simple. The traveller on the march will find himself benefited most by the caffeine, and to secure this the coffee must be brought to and maintained for a few minutes at the boiling point. But to take boiled coffee after a full meal impedes digestion and heightens the heart's action unduly. On the other hand, an infusion of tea or coffee, taken at such times, facilitates digestion and exerts a wholesome and exhilarating action on the nervous system. Long boiling, or stewing near the boil, of either tea or coffee, brings out all the tannin, which is always prejudicial to digestion. As a consequence, the practice of keeping tea or coffee hot, as at restaurants, is a pernicious one.

THE IRISH BUTTER FACTOR'S DEFENCE.

THE Defence Committee representing the butter trade have sent the following as their defence:—

Trial lasted five days.

Analysts and dairy experts appeared on both sides.

15 per cent. standard set up by the analysts for the prosecution as the legitimate maximum for water in butter.

Cases prosecuted contained alleged 6½ per cent. excess.

Independent defence analysts found less percentage than prosecuting analyst certified in both cases.

Prosecuting analyst setting up standard of 15 per cent. had given certificates of purity for 17.50 and 18.20. Certificates produced in court.

No standard set up by English law. Two draft Bills now before Parliament propose to deal with standard of water in butter; one by Sir Charles Cameron, M.P., Glasgow, the other by the Hon. Horace Plunkett, M.P., Dublin.

Somerset House has passed 19 per cent.

Somerset House gave 20.75 in English fresh butter as a pure and genuine sample.

No standard in Denmark, now the leading scientific dairying country in Europe.

Of 2,091 samples analysed at the Danish Government laboratory at Copenhagen, 35 per cent. exceeded 15 per cent., and 15 per cent. exceeded 16 per cent.; percentage varied from 10 to 20 per cent.

Danish import of butter to England for 1893 valued at £5,279,875. Analysts' standard would shut out 35 per cent.

Estimated value of Irish exports to England between £6,000,000 and £7,000,000. If analysts' academic standard be adopted 50 per cent. of Irish butter will be shut out of the English markets.

The whole trade practically joins in the defence, the Wholesale Co-operative Society of Manchester with a butter trade of £1,000,000 sterling per annum, sending both buyers and managers to testify on the side of the defence, joining with the representatives of the competitive trades, wholesale and retail.

Stilton and Dutch cheeses contain 23 and 41 per cent. of water respectively. Cheshire contains 37 per cent., whilst American red contains only 30 per cent. Yet Cheshire brings an extra 3d. to 4d. per lb. more money, the customer probably not knowing or caring in his choosing the more palatable article.

Irish salt or pickle butter sells usually at 2d. to 3d. per lb. less than Danish.

Present prices, Salt Irish, 1s. per lb., Danish, 1s. 3d., and English fresh print butter, 1s. 4d. to 1s. 8d. per lb.

Genuine English fresh print butter may contain 5 to 20 per cent. of water.

The Danish and French Governments spend large sums annually on the dairy education of their farmers. The Danes even subsidise steamship lines to bring over the butter frequently.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.

Powell's Balsam of Aniseed—Coughs and Bronchitis.

Powell's Balsam of Aniseed—Coughs and Hoarseness.

Powell's Balsam of Aniseed—Coughs and Lung Troubles.

Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.

Powell's Balsam of Aniseed—Coughs.—Established 1824.

Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.

Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.

Powell's Balsam of Aniseed—Coughs. Night Cough, Influenza.

Powell's Balsam of Aniseed—Coughs Relieved Instantly.

Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.

Powell's Balsam of Aniseed—Coughs.—Trade Mark.

Powell's Balsam of Aniseed—Lion, Net, and Mouse.

Powell's Balsam of Aniseed—1s. 1½d., 2s. 3d.

Irish pickle butter is the only butter in this market that buyers dare stock for winter keeping, and is now made as it has been for the past century.

Small Irish farmers cannot turn to cheese-making. They can turn their butter into money every week. They could not afford to wait whilst cheese was maturing for market.

The people are the best judges of what they like—they are keen buyers—and on every grocer's counter they have the option of choosing to suit their palate and their pocket.

The following shows what may occur, and other information:—

An adverse decision may not be without political results. If thousands of small dairy Irish farmers are forbidden to make a butter wanted in the market because without the necessary appliances and skill they cannot comply with the Utopian standard set up by analysts, they will not be able to pay rent, evictions must follow, and the Government purchasing tenants will fall into arrears, and the Treasury will either make debts or have to become an exterminating landlord. Thus a home industry will be driven into foreign hands.

If salt Irish butter is interfered with, large lots of mild perishable butter will glut the markets in summer and reduce butter prices to the value of grease.

Lancashire operatives exhibit a preference for salt butter which stands the heat of the mills and keeps sweet, better, and longer. In similar circumstances the fresh mildly cured would go rancid.

The total value of foreign imports of butter for 1893 amounted to £12,754,233. The butter imports to Great Britain, including those from Ireland, are valued at over £20,000,000.

P.S.—Variation of temperature is a principal cause of variability in moisture and manufacture.

THE FIRST TINCTURE OF RHUBARB PROSECUTION IN IRELAND.

AT Enniskillen Petty Sessions Sergeant Robert Sheridan charged W. J. Dickson, chemist, Enniskillen, with selling adulterated tincture of rhubarb. The sergeant said this was one of the first prosecutions of its kind perhaps in Ireland. On December 18th last he purchased four ounces of tincture of rhubarb from Mr. Dickson's medical establishment in East Bridge-street. Mr. Dickson's representative told him to do what he liked with the purchase, consequently he made no division of parts, but sent the entire purchase to Sir Charles Cameron, who certified that same contained only 4.08, whereas it should have contained 5 per cent. extract, and that the solution of tincture should contain 5 per cent. and it only contained 81,002 spirits proof, whereas it should contain 90 per cent. After hearing the evidence, the magistrates dismissed the case.

THE SLINK MEAT TRADE AT PRESTON.

At the Preston Police-court, on February 9th, Thomas Dixon, butcher, Cheetham-street, was summoned at the instance of the town clerk, for having in his slaughter-house the carcase of a cow unfit for human consumption. From the evidence of Food Inspector Marsden he went to the defendant's slaughter-house on January 13th, where he found Dixon and another man in the act of dressing a cow. He watched the process until they came to take out the pleura, when, seeing the condition of the animal, he stopped them. It was extensively diseased and suffering from tuberculosis. The lungs were also badly diseased. He subsequently served a notice. The medical officer of health, who examined the carcase the same evening, said it was most extensively diseased, and from the interior of the chest the tuberculosis was hanging in bunches like grapes. For the defence, Mr. Blackhurst contended that the inspector stopped the process of cutting up, and consequently it was impossible to tell whether the animal was suffering from tuberculosis or not. The Bench imposed a fine of £5 and costs, or in default one month's imprisonment.

CAUTION!

AVOID LAGER BEERS CONTAINING INJURIOUS DRUGS.

THE
PILSENER LAGER BEER,
O. BRUSTER & CO.,

143a, HOLBORN, LONDON, E.C.,

Is guaranteed **BREWED** solely from
FINEST MALT and **HOPS**, and **FREE**
from any **PRESERVATIVES** **WHATEVER.**

BOTTLING AGENCIES IN ALL PRINCIPAL TOWNS.

This Beer is **SPECIALLY RECOMMENDED TO**
THE MEDICAL PROFESSION, who may obtain
Samples free on writing to above address.

MARGARINE PROSECUTION IN BELFAST.

MR. DAVID M'MASTER, Inspector of Food, Drugs, etc., summoned William Wilson, grocer, of 76, Mill-street on February 13th, and his shopman, John Montgomery, for having sold margarine as butter at 1s. 3d. per lb. Mr. A. J. Lewis prosecuted, and Mr. D. M'Gonigal represented the defendants.

Inspector M'Master deposed that on 22nd January he went into the shop of the defendant in Mill-street. He saw a poor-looking old woman buying some butter. He went up beside her, tasted the butter that she was getting, and asked her what she was paying for it. She replied that she paid 1s. 3d. per lb. for it. The inspector then asked the shopboy for a pound and a-half of butter, the same that he had given the woman, and to give it out of the same butt. He said "Yes," and stooped down and pulled a butt out from under the counter. The inspector looked over the counter and saw the word "margarine" branded upon the side of the butt (the shop boy did not see him). The shopboy lifted the amount required, weighed it, and gave it to the inspector, who asked him the price. The shopboy replied 1s. 3d. per lb., and witness gave him a 2s. piece, 1½d. of which was handed back as change. Witness then told him he was the inspector under the Food and Drugs Act, and had purchased the butter for the purpose of analysis. The shopboy said "All right." Witness was proceeding to divide the butter into three parts when the owner came in. Witness told him what he bought the article for. The owner first replied, "All right," but he took the shopboy round the counter for about a minute, and when he came back he said, "This man of mine has made a terrible mistake." He also said he had given it out of the wrong butt, which was margarine and butter. He was a new hand just in from the country and did not know the difference. He was sorry the mistake was made. Witness then divided his butter and gave him one sample and sent the other to Professor Hodges, who certified it was margarine. For the defence the shopboy, John Montgomery, was examined by Mr. M'Gonigal. The inspector had come in and asked for 1½lb. of butter out of the same firkin that the old woman had got hers. He thought the butter was all right, and he gave it to the inspector. There were some firkins under the counter containing pure butter. When he showed the firkin to his master out of which he had taken the butter, Mr. Wilson told witness that he had made a mistake, and he showed the inspector the milk firkin which was under the same counter. Cross-examined by Mr. Lewis: He was taught to read. The tub was branded "margarine." That completed the case. Mr. Lewis: We press for a heavy penalty, as the firkin was branded "margarine." Their Worships imposed a penalty of £5.

PERMANGANATE AS AN ANTIDOTE TO MORPHINE.

A VALUABLE medical discovery has recently been made public by Dr. Wm. Moor, who is a member of the staff of the West Side German Clinic, West Forty-second-street, Chicago. For some time past he has been experimenting with permanganate of potassium as an antidote for morphine poisoning, and by experiments made public during the past week has proven that his theory is correct. In the presence of a number of eminent medical men he swallowed what is ordinarily a fatal dose of morphine, and following it up with his new-found antidote is said to have experienced no ill effects whatever. The discovery is said to be a valuable one in medical science.

THE LEEDS CO-OPERATIVE SOCIETY'S LARD.

ON February 9th, the magistrates at the West Riding Police-court, at Wakefield, were applied to by Mr. Hiley, from the offices of Mr. Trevor Edwards, the West Riding solicitor, to further adjourn the case in which the Leeds Co-operative Society are charged with selling lard alleged to be adulterated. The application was granted, the case being further adjourned until Friday, the 23rd inst.

ADULTERATED BUTTER AT EASINGWOLD.

AT the Easingwold Petty Sessions yesterday, William Barker, of Easingwold, grocer, was summoned under the Food and Drugs Act for unlawfully selling, to the prejudice of the purchaser, butter which contained 90 per cent. of fat which was not butter fat. Inspector Marsden stated that on December 15th last he called at defendant's shop and asked for 1½lbs. of butter and paid 1s. 6d. He told defendant it was to be analysed. Mr. Hayden, on behalf of the defendant, made an objection to the case proceeding because the jurisdiction of the justices were ousted inasmuch as the summons had not been served upon the defendant within 28 days from the purchase of the butter, and he referred the justices to a case supporting the argument. The Bench, however, overruled the objection. Mr. Hayden's defence was that the defendant did not sell the article as pure butter, and that he told the inspector so at the time of purchase. The appearance and price might have been sufficient to testify this. Fined £1 9s. 6d., including costs. Mr. Hayden then asked the justices to state a case for the opinion of a superior court, and the Bench acceded to the request.

MR. ESTCOURT ON THE MANCHESTER PROSECUTIONS.

IN a letter to the *Manchester Courier* Mr. Estcourt says:—"Every intelligent person knows that water will, if kept even at low temperatures, evaporate entirely away. This is true, in a degree, of water mixed with butter, but the evaporation is rather slower. Thus I found that a butter sample taken (just as were those in question) lost 3½ per cent. of water in four weeks, and in other experiments tried the rate was sometimes lower. No definite rate governs the evaporation, but the rate is affected in butter samples by the size of the lumps and the porosity of the paper cover of the containing vessel. Granted, then, that the loss does occur in butter samples if kept in quiescence, what would be anticipated from a sample triated as No. 1,153 was treated? It was purchased by the inspector on September 20th. It was kept by the grocer from September 20th to October 16th, under what conditions no one can tell. It then passed into another hand, was packed up in an empty butter-cask, and was practically rolled to Ireland. Going by rail, steamer, steamer, rail, and cart, it reached Mr. Harrington, at Cork, on October 19th, just one month after I had analysed the duplicate. What wonder if it contained 2 per cent. less than I found on September 20th? Mr. Harrington (*vide* shorthand notes) admitted on cross-examination that the length of keeping and the mode of carriage might account for the difference between our analyses. Regarding sample 1,155 analysed by Mr. Tichbourne, the case was even worse than the preceding one. This sample was purchased on September 27th, and after passing through various hands, and being exposed in the window of a butter warehouse, reached Mr. Tichbourne on the 4th December, or two months and a week after I had analysed it. What wonder if there was a discrepancy, however great, between Mr. Tichbourne's results and those upon the fresh sample? With regard to samples of butter which are brought to me by vendors who have been summoned in some district for which I do not act, my custom, invariably, is to call attention to the fact that the estimation of water is not reliable if more than a week has elapsed between sale and analysis. If both the Irish analysts had admitted this, as one did, then the question as to what is excess water in butter might have been settled last Monday. Here I may perhaps explain why I did not obtain independent analyses to support my own. The reason was that the defendants' solicitor, in the presence of Mr. Rook, stated to me that he did not intend to question the accuracy of my analysis. Why he did so finally must have been, I suppose, under pressure from his clients. But the springing of these analyses upon me created an unforeseen difficulty. The evidence of Sir Charles Cameron, Canon Bagot, and Professor Long, all three experts in the manufacture of Irish butter, and two of them prominent Irishmen, whose patriotism is undoubted, proved conclusively that it is not a question of a great Irish industry being affected, but whether the careless and dirty habits of a few small farmers shall compel the analysts to admit the introduction of 10 per cent. more water than is requisite for the production of a sound and good butter. This water, which will be indifferently Danish, French, Swedish, Norwegian, Irish, and sometimes dirty water, will cost this country hundreds of thousands of pounds. If such an amount is to be spent, it seems no impropriety to suggest that it would be better spent in providing appliances and educating the few people who have not the means or the knowledge necessary for the production of good and cheap butter, rather than the purchase of water, Irish or foreign, when we already have so excellent a supply as those of Thirlmere, Loch Katrine, and the Vyrnwy.

NUPKINS AT CAVAN.

AT Cavan Petty Sessions on the 12th inst., before George McCarthy, Esq., R.M., Sergeant James Stewart, R.I.C. and Food and Drugs Inspector, charged Patrick Boyear, of Butlersbridge, with supplying to Cavan Union, under contract, on December 8th, 1893, new milk which was not of the nature, etc., and to which had been added as an adulterant 16 per cent. of weight of water. The case, which had been heard with others at a previous Court, had been adjourned from January 15th, on which occasion the sergeant proved to obtaining the sample and forwarding it to the Public Analyst (Sir C. A. Cameron), and afterwards receiving his certificate on which the summons was issued. Mr. Fegan for the defendant tendered evidence to show that the milk was taken from the cattle into clean vessels and conveyed direct to the Union without being interfered with in any way. He then asked to have the portion retained by the sergeant sent to Somerset House for analysis, to which his Worship acceded, and adjourned the case for the result.

When the case was called the magistrate read the certificate from Somerset House, which was dated January 29th, 1894, and signed by J. Bell, R. Bannister, and G. Lewin, and stated that the result of their analysis was:—

Non fatty solids	...	...	...	6.64
Fat	...	...	...	2.12
Water	...	...	...	91.24

and that from a consideration of these and after making allowance for keeping, etc., they were of opinion that at least 20 per cent. of water had been added.

Mr. Fegan addressed his Worship for the defence, and asked that only a nominal penalty be inflicted as the defendant was confident the milk had not been tampered with, else he would not have risked

the expense of the Somerset House analysis. The Magistrate said that the result was most unaccountable, and that the water was probably caused by the watery quality of the feeding of the cattle, and that considering it yielded the required degrees of cream a nominal penalty, say 5s., ought to meet the case.

The Sergeant reminded him that the analysis was calculated on a low quality standard, that this milk was supplied to patients as well as paupers, that the defendant had been four times previously convicted of supplying inferior milk, and that the other contractors up with him had been fined £1. His Worship said: There can be no doubt about a conviction. I am bound to convict, but I consider that it is only a case for a nominal penalty, as I am satisfied from the evidence given on last occasion that the water had not been added to it. I will fine him 5s. and costs 12s. 6d., to cover cost of analysis, but if this goes on I must increase the penalty in future, and I would advise those people (defendants) to a better class of cattle which will give a higher quality of milk.

APPOINTMENTS VACANT.

ASSISTANT SANITARY INSPECTOR (West Bromwich), Feb. 23rd.—The Corporation of West Bromwich require an Assistant Sanitary Inspector, at a salary of £80 per annum. His duties will include the supervision of nightsoil and refuse removal. Applications, in candidates' own handwriting, stating age and experience, with copies of three recent testimonials, to be sent to Mr. Alfred Caddick, town clerk, Town Hall, West Bromwich, by 23rd inst. Canvassing, either directly or indirectly, a disqualification.

CLERK OF WORKS (King's Norton), Feb. 27th.—The Sanitary Authority invite applications for the office of Clerk of Works, in connection with the construction of Works of Sewerage and Sewage Disposal at King's Norton, and the erection of a boundary wall and fence around the proposed cemetery at Lodge Hill, Selly Oak. Candidates must be experienced persons. Salary £3 per week. Information as to duties and the proposed works may be obtained from the engineer to the Authority, Mr. Robert Godfrey, A.M.I.C.E., 23, Valentine-road, King's Heath. Applications (marked on cover "Clerk of Works"), stating age and experience, with copies of not more than three recent testimonials, not later than Tuesday, the 20th day of February, 1894. Edwin Docker, clerk, 83, Colmore-row, Birmingham.

ENGINEER (Edinburgh), Feb. 21th.—The Corporation of Edinburgh are prepared to receive applications for the post of Resident Engineer in electric light station, from gentlemen who have had a thorough training both as mechanical and electrical engineers. The salary will be £300 per annum. A schedule of duties will be sent by the town clerk on application. All applications should be in on or before the 24th of February. W. M. Skinner, W.S., town clerk, City Chambers, Edinburgh.

ENGINEER AND SURVEYOR (Chesham), Feb. 17th.—The Chesham Local Board require the services of a thoroughly practical man as Engineer, Surveyor, and General Superintendent of the Board's works. The salary will be at the rate of £120 per annum. Applications, accompanied by recent testimonials to be received by Mr. Frederick How, clerk, Chesham, on or before 17th inst., endorsed "Engineer."

INSPECTOR OF NUISANCES (Handsworth), Feb. 23rd.—The Local Board will, at their meeting to be held on the seventh day of March next, proceed to the appointment of an officer as Inspector of Nuisances and Inspector of Hackney Carriages in their district. Salary as Inspector of Nuisances £145 per annum, and as Inspector of Hackney Carriages £5 per annum, with uniform. Applications, in the handwriting of candidates, stating age, qualifications, and previous engagements, with three recent original testimonials, must be sent on or before Friday, the 23rd day of February, inst., endorsed "Inspector of Nuisances." H. Ward, clerk, Handsworth.

INSPECTOR OF WORKS (Plymouth), Feb. 26th.—The Corporation are prepared to receive applications for the post of Inspector of Works. Salary, £3 per week. (Candidates must have had experience in the construction of brick sewage tanks, concrete, dock, and tidal works generally. Applications, stating age and experience, and enclosing copies of three recent testimonials, not later than the 26th day of February inst., endorsed "Inspector of Works." James Paton, borough engineer and surveyor, Municipal Offices, Plymouth.

MEDICAL OFFICER (Paddington), Feb. 26th.—The Vestry is prepared to receive applications from duly-qualified Medical Practitioners, at a salary of £600 per annum. Age not to exceed 35 years. Applications, on or before Monday, the 26th inst. Frank Dethridge, vestry clerk, Vestry Hall, Harrow-road, W.

MEDICAL OFFICER (Guildford), Feb. 19th.—The Guildford and Godalming Joint Hospital Board require the services of a duly qualified Medical Practitioner as Medical Officer for the isolation hospital for infectious diseases at Woodbridge, Guildford. The salary will be at the rate of £175 per annum. Applications must be sent to Mr. W. V. S. Cullerne, clerk to the Joint Board, County and Borough Halls, Guildford, from whom further particulars of the duties may be obtained.

PLUMBER (Hinckley), Feb. 20th.—The Local Board require a good useful man, as Plumber. Applicants must be accustomed to mains, services, and waterworks generally. Applications, in candidate's own handwriting, stating age, qualifications, salary required, and copies of not more than three testimonials of recent date, to be forwarded, endorsed "Plumber," by 20th February, 1894. Mr. W. T. Howse, surveyor and waterworks manager, Hinckley.

SANITARY INSPECTOR (Baintree), Feb. 24th.—The Authority invite applications for the appointment of Sanitary Inspector at a salary of £100. Application by letter only, in candidate's own handwriting, stating age, which must not be more than 45, experience, and present employment, accompanied by three testimonials of recent date, on or before Saturday, the 24th inst. Fred. Smoothy, clerk, Baintree.

SANITARY INSPECTOR (Plympton, Devon), Feb. 19th.—The Plympton Rural Sanitary Authority invite applications for the office of Sanitary Inspector for their district. Particulars of the duties may be obtained from Mr. Fred. Wm. Cleverton, clerk, 4, Buckland-terrace, Plymouth. Applications, with copies of not more than three recent testimonials, and stating age, salary required, and qualifications, to be sent to the clerk not later than 19th inst.

SANITARY INSPECTORS (Manchester), Feb. 21st.—The Sanitary Committee invite applications for the situations of Sanitary Inspectors (two in number), at the wages of 35s. per week, with uniform clothing. Preference will be given to applicants having had experience in the work and holding the certificate of the Sanitary Institute of Great Britain. Sealed applications, stating age, experience, and qualification, in applicant's own handwriting, with testimonials, addressed to the chairman of the Sanitary Committee, and endorsed "Application for Sanitary Inspector," must be sent in by 21st inst.

SURVEYOR (Loughborough),—The District Highway Board require a Surveyor and offer a salary of £175 per annum. Applications for particulars should be made to the clerk.

CORRESPONDENCE.

DURHAM CITY SHARPLY REBUKED AND AWAKENED.— OFFICIAL INTERVENTION.

To the Editor of FOOD AND SANITATION.

AT the last monthly meeting of the Town Council the following letter was read:—

Local Government Board, Whitehall, S.W.,
11th January, 1894.

Sir,—I am directed by the Local Government Board to acknowledge the receipt of your letter of the 4th instant, forwarding copies of the reports of the public analyst for the city of Durham for the four quarters of the year 1893, and I am to state that the Board observe that for several years past no samples have been submitted for analysis to the public analyst.

Adverting to the Board's letter of the 28th February, 1888, I am to state that it appears to them to be very desirable that the Town Council should instruct one of their officers (see section 13 of the Sale of Food and Drugs Acts, 1875) to procure samples and submit the same for analysis.

I am to request that the matter may be again brought before the Town Council, and that the Board may be informed of the result.—I am, sir, your obedient servant,

ALFRED D. ADRIAN, Assistant Secretary.

F. Marshall, Esq., Town Clerk, Durham.

Mr. Todd said, on going into the accounts he found that for some 20 years past the Authority had been paying a retaining fee of five guineas a year to an analyst, and yet during that time there had not been, so far as he could find out, one single sample submitted to him for analysis. He thought it high time, in the interests of the population of a city like this, that a change for the better was made. He knew, from his own observations, of milk being brought into Durham from the outlying districts which he was certain if analysed would not come near the required standard. He moved that the inspector of nuisances and the inspector of weights and measures be instructed to take such steps as will ensure the provisions of the Food and Drugs Act of 1875 being duly carried out.

Ald. Smith seconded. He had listened to the letter with considerable pain. It seemed to him to be a well-merited rebuke for their past negligence in this matter. It was discreditable to them that this the county town of Durham should be the only place in the county where the provisions of this Act had been allowed to remain a dead letter. The only thing they had done was to engage in the farce of appointing each year an analyst, to whom they had paid an annual salary of five guineas, and by their own absolute supineness had made the office a perfect sinecure. He had from time to time heard serious rebukes from county justices and county councillors as to the enormity of their (the Authority's) neglect, and he agreed with Mr. Todd that it was high time the Act was put into force. It was mainly passed for the protection of the poor people, but here in Durham the poor had been deprived of that protection which the wisdom of Parliament devised for them. In proposing that such steps as those mentioned in the resolution be taken, there was no insinuation against the tradesmen of Durham. As a class the latter were as fair and as conscientious in their dealings as any in the county, but it must be obvious to anyone that the fact of the provisions of this Act being inoperative in Durham was a strong temptation to resort to adulteration. It was highly reprehensible on the part of the Authority to put any such temptation in the way of anybody. He trusted no time would be lost in carrying out the resolution.

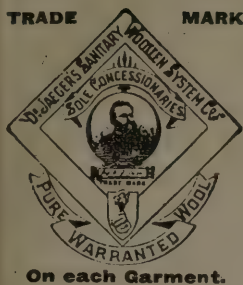
Mr. Jepson said this very question came before the Health Committee a year or two ago, when he strongly urged upon the committee the great desirability of putting the provisions of the Food and Drugs Act into operation in Durham. There was an opposition to it. He pointed out how the people were then being defrauded, especially in regard to the sale of milk. In the county the police found out and prosecuted the sellers of adulterated milk, and yet these same people could and did with impunity come into the borough and sell them weak, diluted milk. He commented on the hardship this entailed on poor people, but he hoped the Authority would now see its way to efficiently carry out the Act. The motion was carried unanimously.

The above action of our local Solons has met with the hearty approval of all honest citizens and traders whose dealings are fair and above board. The payment of £105 for absolutely no return is only one of the many short-sighted extravagances characteristic of our Corporation which evidently can only be aroused to a sense of its duty by the application of vigorous official pressure on the part of the Local Government Board.

PURITY.

WALTHAMSTOW.—During the past year 56 samples have been submitted to the analyst, namely, 48 milk, 6 coffee, and 2 butter. Eight summonses were issued, of these two were withdrawn, and in the other cases fines were imposed. A reference to the County Analyst's summary of work for the year 1893 shows that Walthamstow is by far the most active of the Essex Urban Authorities in its work under the Food and Drugs Acts.

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Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

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If all the Smokers of American Manufactured Cigarettes were to smoke our

"SILVER VEIL,"

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

Why support the product of a country which brags of the McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

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LIEBIG'S EXTRACT OF MEAT & MALT WINE

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Have been received from Medical Men.

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A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps.

Food and Sanitation.

SATURDAY, FEBRUARY 24TH, 1894.

DISGRACEFUL INLAND REVENUE DODGERY.

At the Handsworth Police-court, on February 9th, George Lester, a grocer and wine and spirit dealer, 75, Hamstead-road, was summoned at the instance of the Inland Revenue Authorities for selling one dozen bottles of ale on December 19th without having a licence. Mr. J. W. Clulow defended. Thomas Nisbett, an Excise officer, stated that on the date named he called at the defendant's shop, and after purchasing several articles of grocery which he asked to be sent to his house, he asked to be supplied with one dozen bottles of beer. The defendant replied that he did not hold a beer licence, but to accommodate his customer he would buy the ale and send it with the groceries. Witness paid the bill which was made out, including the beer among the other items. Defendant subsequently had the groceries and beer delivered at Nisbett's house. The Bench were of opinion that a technical offence had been committed, and that a sale had taken place. Under the circumstances they were bound to convict, but they considered that the course taken to secure a conviction by Nisbett reflected no credit upon him, and little upon the Revenue Department. Mr. Lester had certainly been entrapped. For an Excise officer to go to the shop and, after being told by the defendant that he did not hold a beer licence, to insist upon him making a sale was not at all honourable. The Bench imposed the merely nominal fine of 6d. and costs. Mr. Wright, the supervisor of Inland Revenue, wished to make some remarks with respect to the reflections cast upon the Revenue Department, but Mr. Clulow objected, and the magistrates declined to hear him.

We hope some Member of Parliament will raise this and recent other scandals in the House of Commons by necessary questions to the responsible minister. We confess we would rather see the Inland Revenue suppressing the sale of maddening potato or Indian corn spirit as whisky, or chemical "swipes" as beer, than laying such traps upon honest men's good nature, or bringing vexatious prosecutions like the following:

At Heywood, on February 14th, Mr. J. Birch, chemist, York-street, was summoned for selling extract of malt and cod-liver oil, which it was alleged was liable to stamp duty. Mr. Squires, from Somerset House, prosecuted. The defendant was fined.

It would be more creditable to the Department were its chemists to learn snuff analysis, lard analysis, or butter analysis; and the responsible officials who advised Mr. Gladstone to abolish the malt tax that permitted the brewer to make his chemical "swipes" out of road sweepings if he likes, to retire, disgraced and degraded as they are, from injuring their country as public officials, than to put up jobs of this nature upon those who are taxed to support their ignorant existences.

GERMAN CHEESE ADULTERATED.

At Chester-le-Street, on February 14th, John Smith, Gateshead, was charged with an offence under the Food and Drugs Act on January 12th. Defendant did not put in an appearance. Mr. J. Laidlaw, inspector, said that on the day in question he said, defendant who was in the market, where he was selling cheese. A sample was taken from him, which was found to be adulterated. They had had a great deal of trouble to find defendant, who gave the right name, but wrong address. A witness named Wilson spoke to purchasing cheese, for which he paid 2d. Mr. Laidlaw said that the analyst had certified it to be adulterated to the extent of 20 per cent. with foreign fat. The cheese, he thought, was made in Germany. Fined 40s. including costs.

SHEEP DIP: SERIOUS CASE FOR DEALERS.

A CASE of great interest to chemists and drug dealers was investigated by the Chester City magistrates on February 14th, when William Pearson, druggist, of the firm of Pearson, Barton, and Co., Chester, appeared in answer to three summonses charging him with selling arsenic without entering the same in a poisons book, with selling arsenic to a person not of full age, and with selling it to a person unknown to him and without a witness. The evidence showed that the police authorities sent a boy to buy a packet of sheep-dip on February 1st. The lad obtained it without being questioned at all by defendant. It was analysed by Mr. Lowe, the city analyst, and found to contain four ounces of arsenic, sufficient, it was stated, to poison 900 men. The sheep-dip was of the same colour as mustard, and the fact that it was poison was only indicated by small letters in the printed directions. Mr. Brassey, who appeared for the defence, submitted that the offence was caused in ignorance, because the dip had been extensively sold by druggists for 15 or 16 years. The defendant was fined 40s. and costs in respect of the first offence, and was ordered to pay the costs in the other cases.

THE APOTHEOSIS OF LLOYD!

THE Surrey County Council say:—"Having regard to the connection between the county of Surrey and the South Eastern Agricultural College, and the advantageous terms offered by the latter, having regard also to the great importance of employing an analyst, whose certificate would be at once recognised as authoritative, the committee recommend that the appointment be offered to Professor F. J. Lloyd, F.C.S., F.I.C. (of 4, Lombard-court, London, E.C.), Lecturer on Agriculture at King's College, the Consulting Analytical Chemist of the British Dairy Farmers' Association specially engaged by the Bath and West of England Society and Southern Counties Association as Research Chemist in conducting intricate scientific investigations in the Somersetshire Cheese School. It is proposed that, in the first instance, the appointment should be made for one year only, at a retaining fee of 25 guineas, and an additional fee of £1 1s. per full analysis, and 10s. 6d. for each sample requiring a single determination only; of these fees the buyer should pay 5s. and 2s. 6d. respectively to the district analyst, and he should also pay the carriage of samples to the analyst's office; and an agreement should be made with the college to pay one moiety of the remaining three-fourths of the fee, the county the other moiety. We are yet waiting for the "8 per cent. water herd of cows" analysis to be made public before we join in this psalm of praise.

SWIFT AND CO'S LARD.

At Worthing Petty Sessions, on February 14th, Mr. Alfred Osborne, grocer, Newland-road, Worthing, was summoned for selling lard adulterated with 5 per cent. of foreign fat. Mr. Wilkinson defended. A constable proved purchasing ½lb. of lard at the shop over which the defendant's name was up. He was served by Mrs. Osborne, and he told her the lard was for analysis. Superintendent Long said the report of the county analyst stated that the sample was adulterated lard, containing about 5 per cent. of foreign ingredients, viz., beef stearine. Mrs. M. A. Osborne said the business belonged to her. She bought the pail of lard from a Brighton firm. On the pail were the words "Choice pure lard put up by Swift & Co. (28 lbs. net), Chicago." Mr. Wilkinson said the invoice of goods had been held to be sufficient protection for the vendor, and he contended that the words upon the pail were a written warranty within the meaning of the Act. The Chairman: And anything labelled as pure in America is to be accepted as pure in England. Mr. Wilkinson said it was the duty of the Custom House officers to stop the importation of impure goods. The sergeant had not complied with the terms of the statute, as he was not desired to divide the sample, but did so. He asked that the matter should stand over so that the sample could be examined by the Somerset House authorities. The Chairman expressed an opinion that the lard in question was not injurious, but said they were against the defendant on Sections 14, 15, and 25, but they would not then give a formal decision. They would support the county analyst, but Mr. Wilkinson could have an adjournment. The application of Mr. Wilkinson to send the sample to Somerset House was refused, the Bench stating that the defendant must obtain his own. Adjourned for a month.

KILVERT'S LARD.

At the Mansfield Police-court, on February 15th, before Mr. W. W. Hall (chairman), the Mayor (Alderman G. Pickard), Mr. J. Whitaker, Mr. W. M. Oates, and Mr. D. J. Patterson, Charles Bowmar, shopkeeper, Kirby Woodhouse, was summoned by Colonel Storey, inspector of weights and measures to the Notts County Council, for having sold on December 28th ½lb. of lard which was alleged to be adulterated. Messrs. Kilvert, the well-known Manchester lard manufacturers, defended the action. Mr. J. H. White appeared to prosecute, and Mr. Edgar, Manchester, defended. Mr. White, in opening the case, said he appeared for Mr. Jesse Hind, clerk to the Notts County Council. This was a proceeding, he said, taken by Colonel Storey against the defendant for the sale of lard which it was certified was adulterated with a certain percentage of beef stearine. The manufacture of lard at the present time, he would like to call the attention of the Bench to, differed somewhat from the manufacture formerly carried out. It used to be the custom to render lard from distinct portions of the body of a pig, but of recent years large quantities of lard were manufactured in the United States and sent over to this country, and it would appear that the Americans did not take the same care in the manufacture of lard as was taken in this country. The consequence was that it often came over to this country in more or less a liquid form, and in order to render it a commodity to place upon the market it was found necessary to mix with it some slight stiffening matter. It was a common thing to mix beef stearine with lard for that purpose. Although there might be nothing deleterious in beef stearine, when a person went into a shop to buy pure lard they had a perfect right to be supplied with pure lard, and any admixture of beef stearine, however small it might be, was an offence against the Food and Drugs Act. It was just as much an offence as mixing margarine with butter or chicory with coffee. The case in question was one of very great importance for it might involve somewhat large issues. He believed his friend on the other side had a mass of evidence to call before them. He would point out to the Bench that Mr. Otto Hehner, public analyst, had made this branch of the profession his particular study. He held an appointment to the Association of Provision Merchants in the South of England, for whom he had many samples to analyse, and in such matters he was a specialist. If they were satisfied with the evidence he should place before their Worship, he asked them to come to the conclusion that an offence had been committed in contravention of the Act that they felt bound to punish. Colonel Storey, inspector of weights and measures, deposed to purchasing ½lb. of lard from Bowmar, on December 28th, at Kirby Woodhouse. The defendant's daughter waited upon him, and after having made the purchase he told her the purpose for which it was intended. In the usual way he divided the lard into three portions, one of which he kept, another he gave to the seller, and the third was sent to the public analyst. He paid 4d. for the half-pound. Kilvert's name was on the tin containing the lard. Mr. Otto Hehner, public analyst for Nottinghamshire, said he had had great experience in analysing lard. He received numerous samples to analyse. On December 30th he received a canister from Colonel Storey. It contained lard, but as to the manufacturers he knew nothing. He found the lard contained 5 per cent. of beef stearine. At the present time beef stearine was cheaper than lard. He knew it was extensively used for thickening lard which came from America. The lard rendered in America frequently came to this country in almost fluid form. The consequence was English manufacturers had to add a stimulant, which was beef stearine. Cross-examined: The percentage he could not define to a fraction, as beef stearine was not a uniform article. After explaining the difference between the crystals of lard and beef stearine, witness said it was very difficult to tell which was which, only to a practised eye. Mr. W. F. Keating Stock, analyst to the county of Durham and other places, defined the percentage of beef stearine as 3 per cent. He had not the slightest doubt that beef stearine was mixed with the lard. Cross-examined: The certificate, produced, of a sample of lard analysed by him stated to contain 5 per cent. of adulteration, he should not be surprised to hear that it only contained 1 per cent. Mr. Edgar addressed the Bench and reminded them that his clients defended a similar action in that court early in November. Immediately after the last action Mr. Kilvert gave instructions to the works manager that no beef stearine was to be used in the manufacture of lard, and since that time none had been used. He should call evidence to prove that. The defendant (Bowmar), John Godfrey, and Arthur Revill were called to prove the delivery of the lard for Messrs. Kilvert to Messrs. Allen and Swift, Mansfield, from whom defendant bought the lard. Mr. Nicholas Kilvert deposed to seeing the sample purchased by his traveller from Bowmar delivered at Mr. Edgar's office. He took samples to Dr. Campbell Brown and Mr. Cunningham Williams. He was present in the court when the last case against them was heard in that court. On reaching Manchester instructions were immediately given that no beef stearine was again to be used. Since that time those orders had been acted on. In hot weather he found it necessary to add beef stearine to lard to stiffen it. When the weather again became warm he was prepared to add 3 per cent. of beef stearine to the lard, and if necessary fight the question. After Mr. Charles Hawley, manager at the works, and Mr. Edward Bevan had given evidence, the latter, the public analyst for the county of Middlesex, declaring that there was no beef stearine in the lard, the Bench dismissed the case.—Mr. Edgar asked for costs, and the Bench granted him £10.

CURING CHEESE.

THOUGH the curing of cheese is becoming to be better understood, and is attracting the attention of the best men, the New York Experiment Station has been studying the changes that take place in ripening cheese. In five months the loss of weight for 100lbs. of cheese averaged 13.53lb.; the loss of water averaged 10.60lb. in 100lbs. of cheese, and the loss of solids averaged 2.88. There was no loss of fat in the five months, but the loss of casein (nitrogen compound) averaged 1.48lb. for every 100lbs. of cheese. In every case the amount of soluble nitrogen compounds increased in five months. In the cheese when green the amount of nitrogen in soluble form in 100lb. of cheese averaged 10.16lbs. When five months old the amount of soluble nitrogen in 100lbs. of cheese averaged 1.24lb. The cheese when green contained no nitrogen in the form of ammonium compounds, while at five months there were contained from 0.078 to 0.126lb. in 100lbs. of cheese. The cheese in which the largest amount of rennet was used contained considerably more of the soluble nitrogen compounds than did any other cheese at five months. The cheese made from partially skimmed milk contained the smallest proportion of soluble nitrogen compounds at five months, while the cheese made from milk with added cream contained, with a single exception, the largest proportion of soluble nitrogen.

DRUG ADULTERATIONS.

COD LIVER OIL ADULTERATED WITH COTTON SEED OIL.

THE Ohio Dairy and Food Commission say that examination of cod-liver oil has proven that a large amount of it now on the market is adulterated with cotton-seed oil, and many preparations of wine and cod-liver oil have been proven to contain no cod-liver oil whatever. Some samples of lemon oil have disclosed 55 per cent. of turpentine, 15 per cent. of resin, 25 per cent. of lemon oil, and 5 per cent. of water and alcohol. Juniper oil is found to be in about the same condition, and in a number of preparations of wine, beef, and iron, no beef is discoverable and but a very small quantity of iron salts. It is probable that the names of the producers of these spurious articles will be disclosed by the commission.

An examination of the preparations sold by chemists and druggists in England would, we suspect, disclose as queer results as these in Ohio, but the chemist is allowed to adulterate with impunity in England. There is more care taken to suppress this dangerous form of swindling in America; for instance, at Cincinnati, Food Commissioner McNeal has been devoting attention to druggists with the following results:—

Cream of tartar—Grossly adulterated.
Alcohol—Diluted with water.
Salol tablets—Short weight.
Borax—Not pure.
Epsom salts—About one-half strength.
Cinchona bark—Cheapest grade.
Opium—Exhausted, used before for tincture.
Spices—Adulterated with cheap grade meals and starches.
Cinnamon—Mixed with allspice and common oak bark.
Linseed meal—Deprived of oil.
Quinine—Inferior quality and short quantity.

It is a very dangerous state of things that our pharmacopœia is so wretched that no prosecutions for adulteration can take place in England save for two or three articles like tincture of rhubarb. The Pharmaceutical Society would be more honourably employed in taking up this shameful scandal than in endeavouring to hocus the public into the belief that a patent medicine containing poison is less dangerous when sold by a chemist than by a grocer, or seeking to secure for chemists a monopoly of the sale of carbolic preparations.

THE ELDER v. SMITHSON APPEAL.

IMPORTANT POINT AS TO WARRANTIES.

AT Houghton-le-Spring Petty Sessions, the case of Richard Smithson, grocer, of Easington Lane, who, on June 26th last, was proceeded against for selling lard adulterated with beef fat, came before the Bench for re-hearing. When first before the Court the case against Mr. Smithson was dismissed, it being contended by Mr. A. T. Crow, solicitor, that as the bladder in which the lard was packed had printed on the outside words to the effect that it was a pure brand, that was a guarantee sufficient to shield his client from fine. Subsequently the Durham County Council, who were represented at the trial by Mr. B. S. Elder, chief inspector under the Food and Drugs Act, took the decision of the Houghton-le-Spring magistrates to the Court of Queen's Bench. The judges there, after having the facts of the case fully laid before them, found that the decision of the magistrates in the lower court was bad, and they ordered the case to be sent back to the Petty Sessions from which it came, to be re-tried. To-day the magistrates (Mr. E. Richardson, chairman, Mr. T. B. Briggs, and Mr. H. R. J. Webster), who originally heard the case, gave their decision, stating that they believed Mr. Smithson acted under a *bona fide* impression that the printing on the outside of the cover of the lard was a sufficient warranty of quality, a reduced fine of only 5s. and costs was imposed.—At the same court, this morning, Cuthbert Stuart, a grocer, of Shinee-row, was fined 20s. and costs for selling lard adulterated with 12 per cent. of beef fat. Defendant put in a warranty, but as it had been obtained too late the Bench said they could not accept it as a defence.

MARGARINE CHEESE PROSECUTION.

ON February 12th, at Wrexham, John Williams, a provision dealer in the Wrexham Market Hall, was summoned by Mr. C. Moore, inspector, for selling adulterated cheese. Mr. Thomas Bury (town clerk) appeared for the prosecution, and Mr. W. Wynne Evans for the defendant. The Inspector stated that on January 2nd he purchased 2lbs. of cheese marked "6d." at the defendant's shop, and when serving him defendant remarked, "Of course you know this is margarine cheese?" Witness replied that he had bought the cheese for analysis. There was no label on the cheese except the price. The Town Clerk said in whatever form margarine was made up the Act required that it should be properly labelled as such. Mr. Lowe, public analyst, Chester, reported that the sample of cheese submitted to him contained "75 per cent. of foreign fat other than butter fat." Mr. Wynne Evans submitted that there was no case against the defendant, who had distinctly stated when serving the inspector that the article he was supplying him with was "margarine cheese," and therefore the said article was not "sold to the prejudice of the purchaser," and was not an offence within the sixth section of the Act under which the defendant was now summoned. In support of this contention, Mr. Evans cited the case of Sandys v. Small, in which Mr. Justice Manisty held that "where the seller of an article brings to the purchaser's knowledge the fact that the article sold to him is not of the nature, substance, or quality of the article he demanded, it is not a sale to the prejudice of the purchaser." He submitted that there was absolutely no case whatever against his client. The Town Clerk asked for a conviction, and contended that it was no defence to show that the purchaser was an inspector, and that the article was purchased for the purpose of analysis, and that in this instance it was no answer to the charge to urge that the defendant had told the purchaser the nature of the article he was selling him. After consultation, Mr. T. C. Jones said the magistrates were entirely governed by two cases quoted by Mr. Wynne Evans, and the summons would therefore be dismissed. The Town Clerk: Then I apply for a case. Mr. T. C. Jones: Which we must decline. The Town Clerk: Then I shall apply to the Court to direct your worship to grant a case. I make formal application for case to be stated for the opinion of the higher court, and if a case is not stated I shall know what to do. I wish it to be distinctly understood that I do not acquiesce in the right of the Bench to decline a case

HORLICK'S
MALTED
For Infants
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MILK
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
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BASS'S ALE.

BASS & Co. last week obtained an injunction restraining one firm from vending as Bass's ale a product not brewed by that eminent firm. The amount of damage done to first-class firms by such impositions upon them and the public is enormous. It would be interesting to know who bottled the beer that gave rise to the following case heard before

MR. JUSTICE LAWRENCE and a common jury.

Mr. Charles John Davis sued Mr. R. E. Miller for damages for injuries caused to him by reason of having sold to him a bottle purporting to contain Bass's ale, whereas it in fact contained oxalic acid. Mr. H. C. Richards and Mr. Soper appeared for the plaintiff; Mr. Johnstone Watson for the defendant. Mr. H. C. Richards, in opening the case for the plaintiff, said that on September 16th last a nurse bought two bottles of what purported to be Bass's ale from Mr. Miller's shop in the Fulham-road. The bottles of ale were bought by the defendant from the Cooper Company, of Southwark-street, S.E. No imputation was suggested against Messrs. Bass. The first bottle was opened and was drunk. The second bottle appeared to be specially bright. Fortunately the plaintiff did not drink it, but he put it to his mouth and he was immediately found to be suffering from an irritant poison. The bottle of beer was given to Mr. Longstaffe, an eminent analyst, and he would give evidence as to what the bottle contained. Emily Lowe was then called, and, in answer to Mr. Richards, said:—I am a nurse, I attended Mr. Davis's daughter in September, and was sent on the 6th of that month to Mr. Miller's shop, where I bought two bottles of Bass's ale. Mr. Davis drank some. I heard an exclamation, "Oh, dear! what is the matter with you?" Mr. Davis went to the doctor's. Cross-examined by Mr. Watson: The bottles were screw-stopped and the labels unbroken. It was the only ale in the house. Mr. Davis is an oilman. I took the bottles back to Miller's shop. Mr. C. J. Davis, the plaintiff, examined by Mr. Richards, said: On September 6th I was at Fulham. I opened the bottle, the label being intact. I poured some in a glass and put it to my mouth. I immediately felt a burning sensation at the back of my throat. I can still feel a dry, burning, cutting sensation in my tongue. Cross-examined by Mr. Watson: I went to see my daughter at her private house at Fulham. I suffered from a shock to my system for a week. For two or three days I swallowed my food with difficulty. Mrs. Henrietta Davis, the plaintiff's wife, confirmed the evidence given by her husband. She said that immediately her husband drank the ale he spat it out and was sick. Dr. Calder, examined by Mr. Richards, said: I am a medical man, and practise at 2, Fulham-park-villas. The plaintiff came to me and complained of having swallowed something. I gave him an emetic, and found he was suffering from an irritant poison. The fact that he had been given salad oil as an antidote to the poison would not explain the condition of the throat. Mrs. Patterson, wife of a medical man, said she received the bottle and locked it up. Mr. Longstaffe, an analytical chemist, of Fulham, said: I received this bottle (produced) from Dr. Patterson. I evaporated one ounce of the beer and found 52 grains of solid matter. The quantity in an ounce of an ordinary bottle of Bass would be about ten grains. Oxalic acid is an irritant poison. It will produce evil results. Cross-examined by Mr. Watson: The bottle was more than two-thirds full when I received it. This was the case for the plaintiff. Mr. Watson submitted that there was no case to go to the jury. There was no suggestion of any negligence on the part of the defendant. The defendant sold the article under a trade description, and he sold it in the same condition as he received it. Mr. Richards: "Randall v. Newson" (2, Q.B.D., 102) shows that the article was sold as a commercial article. (His Lordship: So it would be if you wanted it to clean top boots with.) His Lordship ruled that the case must go to the jury upon the question as to whether the defendant had been guilty of negligence. Mr. Richards then addressed the jury upon behalf of the plaintiff, and said that if the plaintiff had drunk the whole of the bottle he would probably have been taken from this world, and probably from this court. (His Lordship: If he had been taken from this world he would certainly have been taken from this court. We do not stand between this world and the next.) Mr. Watson having replied, his Lordship in summing up said the question for the jury was, was there negligence on the part of the defendant; and, secondly, assuming there was negligence, what damage had the plaintiff suffered? The jury found there was no negligence, but if there was they found £20 damages. Mr. Watson submitted that there was no implied warranty that a bottle labelled "Bass and Co.'s Pale Ale" contained beer; there was only a warranty that the bottle contained a fluid which Messrs. Bass called ale. He also submitted that under the Merchandise Marks Act, 1862 (25 and 26 Vic., c. 88), sections 19 and 20, the only warranty was that the label was not a false label, not that the bottle contained beer. Mr. Justice Lawrence held that the label constituted a warranty that the bottle contained Bass's beer, and gave judgment for the plaintiff for £20 damages.

KIDDERMINSTER.—Mr. J. T. Cowderoy, Sanitary Inspector, reports that during 1893, 223 pieces of meat weighing 616 lbs. were condemned and destroyed as unfit for human consumption. There were 45 samples taken for analysis under the Food and Drugs Acts, in 15 of which prosecutions took place.

HOLLANDS GIN.

THE records of the past give us no definite information as to the original discovery or first manufacture of the liquor which is now known the world over by the name of "gin." At the time of the invasion of the Low Countries by Charles V., gin was an important product of Holland.

It is more than probable that the ancient disciples of Esculapius who, in the middle ages, and before, paid great attention to the use of herbs in medicinal preparations, early discovered the properties which were contained in the juniper berry, and, by steeping the berries in spirits, made a crude extract, afterward improving the manufacture into one of distillation.

Gin owes its medicinal properties, characteristic flavour, and name to the juniper berry, usually a shrub from two to six feet high, but which, in favourable localities, as in Northern Italy, attains a height of twenty-five feet.

The fruit of the juniper contains, before ripening, an essential oil—the oil of juniper. At the full maturity of the fruit this oil changes to a true turpentine, so that, to obtain the juniper oil, the fresh green fruit must be used.

The name "gin" is derived from the juniper through the French "Genievre" (meaning juniper), corrupted into "Geneva," and in Holland "Jenever." From the city of Schiedam, which is almost wholly devoted to the manufacture of gin, comes the designation "Schiedam Schnapps" (Schiedam Spirits).

The manufacture of gin in Holland being one of almost national importance, the term "Hollands" is often used to designate the article. That the term is not unjustifiable is shown by the fact that in one year the spirits distilled amount to over ten million gallons, the grain and malt mills supplying fifty-three million pounds of rye meal and forty-seven million pounds of malt; yet the Dutch are not an intemperate people, the larger part of the manufacture being exported to foreign countries.

Each distiller of the finer grades of gin claims to have his own secret ingredients or process of manufacture not known outside of the distillery, and by which he is enabled to produce a finer quality or better-flavoured article than his rivals. While this is in a few cases true, care in the manufacture, cleanliness in the details, and the selection of the best, both of spirits and juniper berries, is the "secret" which not all of them have yet learned.

While varying somewhat in details, the process of manufacture is as follows: A mash is prepared consisting of one part of malted "bere" or "bigg," and two parts of rye meal, with four parts of water at a temperature of 162 degrees Fahr. After infusion a proportion of cold water is added, and when the heat is reduced to about 80 degrees Fahr. the whole is run into the fermenting vat, to which about half a gallon of yeast is added. Fermentation speedily ensues, and in about two days the attenuation is complete, although at this stage nearly one-third or the saccharine matter in the liquor is undecomposed. The special features of the fermentation are the small proportion of yeast employed, and the imperfect attenuation of the worts. The wash so obtained is distilled, and the resulting low wine is redistilled with the addition of juniper berries and a little salt; sometimes hops are added in the final distillation. The final product is run off into large underground cisterns lined with porcelain tiles, where it can be kept indefinitely without obtaining colour. It is drawn off as required into casks which have been previously treated to avoid colouring the contents.

Dutch gins vary much one from the other, but generally they are much purer and mellow than the more highly flavoured and frequently adulterated British gins.

There is much variation in the ingredients employed, and cardamoms, cassia, or cinnamon are often used in flavouring. An article called gin is prepared by mixing spirits with certain proportions of the essential oil of juniper without redistillation, and a great deal of inferior liquor is made with oil of turpentine and aromatic substances, the juniper berry not entering into the composition.

To give some idea of the extent to which adulterants are used to produce liquors which are sold under the name of gin, the following substances have been found in them by chemical analysis; Alum, carbonate of potash, oils of juniper, cassia, nutmeg, lemon, sweet fennel, caraway, coriander seeds, cardamoms, capsicum, creosote and even sulphuric acid.

To prevent cloudiness and turbidity, which inferior and adulterated gins would show when mixed with water, alum, carbonate of potash, acetate of lead, and sulphate of zinc are added. To give an artificial pungency and mellowness, grains of paradise and cayenne pepper are used, and the absence of spirit covered by sugar.

Very few distillers of gin now manufacture directly from the grain, but obtain the moutwijn from the numerous distillers of that article, the price being quoted from day to day on the Exchange, varying according to supply or demand, a few use, instead of moutwijn, a spirit manufactured from potatoes, and called "potato spirits."

Until recently the manufacture of gin has been confined to Holland and England, but of late years its manufacture has been introduced into the United States. While many American distillers claim to produce a purer, finer, and better grade of gin than any imported, they have as yet failed to produce, even by means of the "Holland process," an article equal to that obtained by the patient Dutchman with the results of years of experience and improvement—slow but sure.—*Pharm. Era.*

FIFTEEN YEARS' OBSERVATION AMONG BEER-DRINKERS.

By LAMBERT OTT, M.D.
(Of Philadelphia.)

THE manufacture of beer requires the labouring brewer to expose himself to various temperatures ranging from 90deg. F. to a cold and damp cellar at the freezing-point, although it is not often that one man works in different departments in one day, the members of each gang usually having more or less continuous work at one job, to which they are confined by reason of their experience and training.

It may happen that one man, passing from the "brew-house" through the fermenting-room, thence through the beer storage-rooms, cooled by an ice-machine, passes through a varying temperature having the extremes of 100deg. F. and freezing. In a healthy young adult, not undermined by excesses, and protected by ample clothing, no untoward results follow.

The constant association and use of beer as a beverage begets a distinctive type of humanity, possessing natures kind and pleasing. The physical peculiarities are a florid complexion, due in many cases to capillary varicosity, and a tendency to the accumulation of fat. Often have I observed young men, of slight build, with no inherited predisposition to obesity, after a year or two in a brewery, acquire a sunny disposition and an accumulation of fat, the attenuated and introspective dyspeptic being transformed into the happy and fat brewer. In rare cases idiosyncrasies are apparent in which a small and bony individual refuses to acquire fat, even after excessive libations of beer. It is not easy to explain this difference, but those possessing this peculiarity are of a vicious inherited tendency, carrying a diathesis which at an opportune time develops some irremediable ill.

The blood of the beer-drinker—I use the term as applied to men constantly employed in breweries, and who drink nothing but beer—shows microscopically an increased proportion of red corpuscles and a diminution of white corpuscles. An inveterate beer-drinker, suddenly ceasing his drinking, suffers no special inconvenience beyond the natural longing, which is of short duration, besides a rapid loss of flesh—I should say redundant flesh, a decline of his florid colour, which is soon replaced by a paler hue, but at no time approaching the pallor of anæmia. Those consuming large quantities of beer daily, and eating very little food, after a time become stupid, dull to their surroundings, and only aroused from this semi-drowsiness by a fit of anger or an exciting incident; but this mental torpor is only temporary, disappearing as soon as the habit is corrected. When an abnormal condition is caused by excessive beer-drinking, the sudden abstinence does not prevent a rapid return to the normal, this fact standing in marked contrast to what occurs to the whisky-drinker.

I have to differ with the opinion of some writers on stomach-diseases that beer retards digestion, notably Osler, in his recent *Practice*, who otherwise is so clean-cut and select in his therapeutics. The Germans consume three and four large glasses of beer daily with their luncheon or dinner, and I have never yet heard or seen complaints of indigestion, whereas with the use of other alcoholic potations during meals it is different. I have examined the vomit of the whisky-drinker after having been in the stomach five or six hours, and no indication of chymification of the ingested food was evident. Another peculiarity of the beer-drinker is the enormous bladder-capacity he acquires, passing at one time as much as one quart or more of urine. Stone in the bladder and cystic diseases are exceedingly rare.

Among the pathologic conditions produced by excessive libations of beer, foremost is *subacute gastritis*. This disease is most prevalent in the summer months. Among one hundred cases noted, seventy-eight occurred during the months of June, July, and August. The cause is the pouring of cold beer into an empty stomach; but I have observed this important point, that those suffering from gastric trouble for the most part took their morning "Schnapps," with half-a-dozen drinks interspersed between their drinks of beer. Those confining their drinking entirely to beer suffer less, especially when taking their beverage after or during a meal, and in warm weather avoiding large draughts of cold beer when overheated or into an empty stomach.

The few prominent and ever-present symptoms of this variety of subacute gastritis are:—great lassitude, total loss of appetite, vomiting of all food, vomiting of mucus mixed with bile, particularly in the morning, heavy dull pain in the epigastrium, and a swollen beefy tongue, with highly red edges. These patients, further, complain of weakness, headache, nausea when smelling cooking, seldom fever, rarely a sub-lingual temperature of 100deg. F., tenderness over the stomach, relaxation of the bowels, profuse perspiration on slight exertion, and palpitation of the heart. There is extreme nervousness, sometimes sleeplessness, and, what is peculiar, an aversion to all drinks. The urine is scanty, high-coloured, and shows a heavy deposit of urates. There is one symptom in particular which the brewer complains of when visiting your office, and that is great lassitude. If on further inquiry you find no fever and an aversion to food, one can invariably conclude the case to be one of subacute gastritis. Often there is complaint of such complete prostration and an expression of a fear of typhoid fever developing; but the trouble is gastric and of short duration. The absence of pyrexia at once excludes a continued fever. The duration of the attack is from three to seven days, much depending upon the care the patient takes of himself.

The prognosis is favourable.

In treatment absolute rest in bed is to be insisted upon, with total abstinence from all stimulating drinks; liquid and easily digested diet, including hot milk, hot barley-water and rice-water, beef-tea, hot soups, etc., is to be ordered; and when hot drinks are objectionable cold drinks may be permitted. Milk should be taken with care, slowly sipped, and holding a quantity in the mouth before swallowing; otherwise in most cases it curdles and is rejected. Counter-irritation by means of an application of mustard to the stomach until the skin is permanently reddened is also useful, and the internal administration of the following prescription, in conjunction with the foregoing regimen, I have found a specific:

R.—Bismuthi subnit.	...	...	...	3vj.
Sodii bicarb.	...	...	...	3j.
M. et div. in chart. no. xij.				

Sig.—One powder every two or three hours, preferably on an empty stomach.

For the aggravated thirst I order Vichy or Seltzer water alone, or in case of decided weakness, with equal parts of Rhine or claret wine. In from three to five days convalescence sets in, as evidenced by the return of the appetite, cleaning of the tongue, and a disappearance of the weakness; at this time it is all-important to forbid any malt or spirituous liquors, even a small potation causing an exasperating relapse.

Among two hundred brewers examined as to the condition of the bowels, relaxation was the rule; from two to four bowel movements daily being the average, which they consider normal. Constipation is rare.

Diseases of the lungs and heart seem uninfluenced by excessive libations of beer. The kidneys are rendered active; the urine passed is light in colour, of a low specific gravity, and profuse in quantity. Cirrhotic kidney and hob-nail liver, so common in the whisky-drinker, are not found in the beer-drinker.

In eighty cases of acute alcoholism and delirium tremens occurring in labourers in breweries 75 per cent. were consuming from six to eight drinks of whisky or brandy in addition to their beer. Cases of delirium tremens were usually heavy beer-drinkers with occasionally "Schnapps," who by-and-by found too little stimulation in beer, cast it aside and drank stronger alcoholic liquor altogether, until the direst results followed. It is seldom that one finds a pure beer-drinker affected with delirium tremens; oftener acute alcoholism is encountered, and in these cases there is an additional element, as bad home-surroundings or a vicious taint of the system.

I have had under observation a few brewers, rather labourers in a brewery, for fifteen years who drank on an average from twenty-five to fifty glasses of beer daily, in the aggregate from one to two gallons for each sixteen or eighteen hours, and at no time have they been ill or suffered any of the evil consequences of excessive libations. None drank anything but beer, using no tobacco and eating three hearty and well-prepared meals a day. Otherwise they were of good habits, obtaining ample sleep, cleanly, and of a favourable family history. They are yet strong, and capable of great labour. Others living under similar conditions, accustomed to the mixing of their drinks, excessive use of tobacco, have long ago fallen by the wayside.

Many brewers have a vicious habit of drinking numerous glasses of beer before breakfast, and when such a one returns to his home for breakfast at six or seven in the morning, his appetite is impaired. The sudden withdrawal of beer in a simple beer-drinker does not produce the violent nerve-agitation that occurs under the same conditions in the whisky-drinker. He frets and longs for his beverage, but, soon used to abstinence, eats more heartily, becomes paler, and at no time is there marked irritability or peevishness.

Beer taken in moderate quantities under physiologic conditions produces plethora—a decided increase of red corpuscles; therefore, in anæmia and impaired nutrition, I have found from one to two pints daily, taken with or after meals, or with a light lunch between meals, of decided benefit.

In the foregoing conditions I have, in conjunction with beer, given the tincture of the chloride of iron, and especially have the results been striking in nursing women, in whom not alone was there an increase in the mammary flow, but a richer milk and an improved appearance of the suckling. In a series of experiments I have given plain beer to a number of nursing women and then added iron in an equal number; comparative observations showed that there was in the latter number not only an improvement in the mother's milk, but also in the mother and in the nursing. In women debilitated by protracted nursing and in whom it seemed necessary to wean their babies in the early part of the summer, this treatment has made it possible to prolong the nursing through the hot months and has kept the mother in a fair condition, by reason of which she was able to secrete ample milk and give her child proper care. There is a quantitative and qualitative change in the milk, besides an improved condition of the mother. The quantity taken should be one pint per day for the first week, then two or more pints per day during the nursing period, with fifteen drops of the tincture of ferric chloride to each pint of beer. Some women unused to beer find difficulty in taking this quantity, despite their intense eagerness to feed their young, but by icing it and drinking during meals tolerance and taste are acquired.

In the puerpera, when on the fifth or sixth day there seems to be a tardy flow of milk, I have ordered this treatment with

advantage; and as late as the tenth day, when all hope of obtaining breast-milk had been abandoned, the beer was pushed, and, conjoined with the stimulating effect of the infant nursing, led to the secretion of a satisfactory supply of milk. In very fat women everything fails to stimulate the flow of milk, even a temporary increase due to the beer declining in a few days.

BEWARE OF PROPRIETARY BAKING POWDERS.

As baking powder may now be *legally adulterated with alum*, or whatever harmful substance any manufacturer chooses to use, grocers would do well to prepare their own, and thus be assured of its purity, wholesomeness, and freedom from objectionable ingredients. It is very easy to make, and the profit is considerable. We give directions for the manufacture of powders of three qualities.

In order to insure their keeping well, each ingredient should be first thoroughly dried by a gentle heat, and they should be kept securely closed in dry fruit jars, corked bottles, or sealed cans.

- | | | | | | | |
|----|------------------------|-----|-----|-----|-----------------|---------|
| 1. | Tartaric acid | ... | ... | ... | 1 | pound. |
| | Bicarbonate of soda | ... | ... | ... | 1 | " |
| | Starch (powdered) | ... | ... | ... | $\frac{1}{2}$ | " |
| 2. | Cream of tartar | ... | ... | ... | 2 | pounds. |
| | Bicarbonate of soda | ... | ... | ... | 1 | pound. |
| | Starch (powdered) | ... | ... | ... | $\frac{3}{4}$ | " |
| 3. | Acid phosphate of lime | ... | ... | ... | 1 $\frac{1}{2}$ | pounds. |
| | Bicarbonate of soda | ... | ... | ... | 1 | pound. |
| | Starch (powdered) | ... | ... | ... | 1 $\frac{1}{2}$ | pounds. |

The ingredients, all finely powdered, should be first sifted separately, to get rid of all lumps, then the soda and starch should be well mixed together, and finally the acid ingredients should be added, and all thoroughly incorporated, either by rubbing together in a mortar or by sifting at least three times. Flour can be used in place of starch, and is considerably cheaper.

The amount of starch can be increased in any of the recipes, the other ingredients being left the same, and in this way be made at almost any price desired. The starch is simply used to keep the chemicals in a powder form from acting upon each other as much as possible, and, being cheap, is used very liberally in the low priced baking powders. Each recipe will produce a baking powder equal to the very best of its respective kind, if the very best chemicals are used.

LEGAL.

RIVAL DISINFECTING CHAMBERS.

LYON v. GODDARD.

THIS was an application for an order for damages against Messrs. Goddard, Massey, and Warner, for the breach of an injunction previously granted. Mr. Bousfield, in supporting the application, said he had to move to commit two of the defendants—Mr. Massey and Mr. Warner—for contempt of court in reference to their breach of an injunction granted by Mr. Justice Wright, restraining the infringement of a patent in respect of disinfecting machinery used principally by public bodies. The judgment of Mr. Justice Wright had been upheld on appeal to the Lords Justices. Application was then made for a stay pending an appeal to the House of Lords, but was refused. Some months after, the plaintiffs discovered by the merest chance that one of the machines the defendants had in stock had been sold to Shanghai as if it were a matter of business in the ordinary way. The machine had never been brought into account before the Official Referee, as ordered by the Lord Judge. When the matter was before the Court of Appeal the Master of the Rolls was rather anxious that the plaintiffs should allow four machines to be supplied on public grounds, but as the defendants would not pay royalties, Messrs. Lyon stood upon their rights. Mr. Wallace said his clients certainly had committed a breach of the injunction. Mr. Justice Mathew: What form of punishment will you take? (Laughter.) Mr. Wallace said the machine in question was the only one that had been sold in contravention of the order of the Court. His clients had acted under a mistake as to the scope of the injunction and the meaning of the law. They thought the injunction only referred to machines to be sold in England. The machine here was in course of construction before the trial, and was one of those the plaintiffs were allowed to go on with. It was sent to the Corporation of Oldham, who returned it because of the litigation about the patent. The Oldham machine had been brought into account before the referee, but there was no mention of its having been sent to Shanghai. The reason was, that in November, when the account was made up, the item had not been brought into the day-book, and it was omitted from the account by inadvertence.

Upon the last day, however, before the Official Referee, his attention was called to it, and he would take it into consideration in making his award. There were some 54 machines manufactured altogether, and the account dated from 1887. Mr. Goddard had left the business for some time, and had nothing to do with the matter. Mr. Warner was not cognisant with the proceedings, he was away from business at the time, and Mr. Massey was solely responsible for anything that had been done. The facts stated were set out in the affidavits of the two defendants, and they both said they were sorry for what had taken place, and they gave particulars how the matter arose and the manner in which they were misled. Mr. Mathew: What do you ask, Mr. Bousfield? Mr. Bousfield said the machine was not brought into account until after the notice of motion. It was an extremely serious matter. Mr. Justice Mathew: No doubt about it.

Mr. Bousfield asked that the defendants should give a further affidavit of documents and give inspection and deliver up all machines, complete, or in process of manufacture, in their custody or control. The plaintiffs would have been entitled to an order for delivering up or destruction at the trial had they not been lenient and not insisted upon their rights. There were still three or four machines, finished or unfinished. He also asked that the defendants should be ordered to pay the royalty upon the machine sent to Shanghai. Mr. Justice Mathew: There is an appeal pending to the House of Lords? Mr. Wallace: Yes. Mr. Bousfield said the plaintiffs' patent had only a few months to run, and the endeavour of the defendants was to keep the business going until then, when all would go merrily. The Corporation of Oldham would not take the machine because they would have had to pay the royalty of £100 for the user. The machine having been sent to Shanghai, Messrs. Lyon could not now get the royalty. Mr. Wallace had no objection to pay the plaintiffs the profit on the machine sent to Shanghai. Mr. Bousfield asked for the royalty. Mr. Wallace: They have no patent in China, and there is, therefore, no right to a royalty. Mr. Justice Collins: Had you a binding contract with the Oldham Corporation to take the machine? Mr. Wallace: Yes. Mr. Justice Collins: Then why did you give it up? Mr. Wallace: We could not force people to take a machine that they could not use, and we had to take it back. In all the other cases in which we have supplied the machine in this country they have got the royalty. The error we have made is in making the machine in this country. Mr. Justice Mathew: We think the ordinary profit is enough. Mr. Wallace did not object to making a fresh affidavit of documents. But the delivery up or destruction of the machines would be a very great penalty to impose. There were four machines as to which there had been negotiations with the plaintiff. One was ordered by the Islington Vestry. They were worth from £300 to £400 each, and to order the defendants to give them up would be making them pay £1,500, or £1,600 at least. It was only a portion of the plaintiffs' patent in the machine. His clients had a patent in it also which they had no right to use. Mr. Justice Collins: Do you dispute that in ordinary circumstances you would have to give up the machines? Mr. Wallace did entirely. It was not even asked at the trial. Mr. Bousfield: It was in the pleadings. The very flagrant character of this case I have not troubled about. Mr. Justice Mathew: We are told negotiations are going on. Mr. Bousfield said this dealing had put an end to them. If the machine had not been sent out to Shanghai, the plaintiffs might have got their royalty upon it. Mr. Wallace said his clients were prepared to give a bond for £1,000, payable immediately, if they sold a machine in contravention of the injunction. Mr. Bousfield submitted that the object of the defenders was to carry on this illicit trade without any perceptible break until the patent ran out in August. In the circumstances he was entitled to the order he

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

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- Powell's Balsam of Aniseed—Coughs.—Established 1824.
- Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
- Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
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- Powell's Balsam of Aniseed—Coughs Relieved Instantly.
- Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
- Powell's Balsam of Aniseed—Coughs.—Trade Mark.
- Powell's Balsam of Aniseed—Lion, Net, and Mouse.
- Powell's Balsam of Aniseed—1s. 1 $\frac{1}{2}$ d., 2s. 3d.

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asked for. Mr. Justice Mathew said in this case the plaintiff was entitled to the order he had asked for. Therefore, the Court would direct that the attachment should be drawn up, but that it should lie in the office for a fortnight and not be issued at all if the undertakings given were complied with, which were that the defendants should give up the machines mentioned, pay the costs of this application, and the profits made on the machine sold in Shanghai brought into the account. Mr. Bousfield: Of course, they will have to make the affidavit of documents to which I alluded and which my friend promised. Mr. Justice Mathew: Yes. Mr. Bousfield: I think in this case, too, we ought to have costs as between solicitor and clients. Mr. Justice Mathew: Yes. Mr. Wallace: Of course, this order is made against Messrs. Massey and Warner and not against Mr. Goddard, who is no longer a partner in the concern.

EXCESS WATER IN BUTTER.

ROYAL COMMISSION DEMANDED.

At a meeting of the Irish Creamery Managers' Association, the recent Manchester prosecutions were discussed, and the following resolution was, on the motion of Mr. Blount, seconded by Mr. G. R. Brown, adopted:—

"That in view of the recent prosecutions for excessive water in butter, which have taken place in Manchester, and of the conflicting evidence which was submitted on both sides, and of the unsatisfactory state of the law on the subject, we call on the Government to appoint a Royal Commission to make a full investigation, at which the evidence of analysts, manufacturers, and merchants would be taken before any legal standard be fixed; and that copies of this resolution be sent to the President of the Board of Agriculture, the Chief Secretary for Ireland, the Hon. Horace Plunkett, M.P., Sir Charles Cameron, and the South of Ireland Butter Merchants' Association."

ADULTERATED OATMEAL.

JOHN WILLETT, of Lewan-street, Whitechapel, was summoned at the Thames Police-court to-day for selling oatmeal adulterated with at least 15 per cent. of wheat flour. The defendant's answer was he sold the oatmeal as he received it. He called Mr. William English, of the firm of John English & Sons, millers and manufacturers, of Leith, who said through their London agents they had supplied defendant. He was surprised to hear the oatmeal was adulterated, but from what has since come to his knowledge he believed Mr. Willett sold the oatmeal as he received it. As a technical offence had been committed, a fine of 20s. was imposed.

BOB BURDETTE'S BREAKFAST.

PLACID I am, content, serene;

I take my slab of gypsum bread,

And chunks of oleo-margarine

Upon its tasteless sides I spread.

The egg I eat was never laid

By any cackling feathered hen;

But from the Lord knows what 'tis made

In Newark by unfeathered men.

I wash my simple breakfast down

With fragrant chicory so cheap;

Or with the best black tea in town—

Dried willow leaves—I calmly sleep.

Bob Burdette.

A CHINESE RIVAL TO W. T. STEAD AND THE MATTEI QUACK CANCER CURE.

THE following is a prescription for the cure of malignant cancer by a famous Chinese physician in San Francisco:—

Dragons' hearts' blood, 1 ounce.

Pickled lizards, 2 ounces.

Corea ginseng root, 4 drachms.

Willow cricket skins, 12 ounces.

Rattlesnakes' tails, 3 ounces.

Sweet-potato vine, 6 drachms.

Black dates, 2 ounces.

Red bark, 1 ounce.

Devil-fish suckers, 3 ounces.

Reindeer's horns, ground, 210 grains.

Birds' claws, 12 drachms.

Lotus leaves, 6 ounces.

White nuts, 5 ounces.

Old coffin nails, 8 drachms.

Boil the whole in two quarts of water. A tablespoonful every three hours.

APPOINTMENT OF AN ANALYST AT PAISLEY.—At a meeting of the Town Council it was agreed that Mr. Charles Manners, jun., Paisley, should be appointed analyst under the Fertilisers and Feeding Stuffs Act.

PROPOSED APPOINTMENT OF ANALYST.—The Business and Finance Committee of the Orkney County Council have agreed to recommend the appointment of Mr. Falconer King as county analyst under the Fertilisers and Feeding Stuffs Act.

SANITARY NOTES.

GRIMSBY.—A proposal made at a meeting of the Grimsby Town Council to increase the pension of Mr. Moody, senior sanitary inspector, from £1 to 25s. per week, was negatived by a majority of one. At the same meeting there was considerable haggling over a motion to appoint a clerk in the offices of the Sanitary Department, where there is no clerical staff at present, at £1 a week. This proposal was, however, eventually agreed to.

SANITATION IN DUBLIN.—At a meeting of the Dublin Corporation on February 7th the Public Health Committee recommended that the Waterworks Committee be asked to report upon the desirability of appointing plumbing inspectors to make house-to-house visitation with a view to detecting cases in which cisterns are so constructed or situated as to render the water liable to contamination. This proposal was rejected by twenty-two votes against nine. Another recommendation from the same committee, that a qualified engineer be appointed to superintend, under the direction of the medical officer, all drain-testing and the general work of the sanitary staff—which appointment the committee considered would enable them to maintain a closer supervision over private property—was also rejected.

SHEFFIELD.—The Health Committee recommend the provision of lavatories for ladies upon two suggested sites in the district, one at the bottom of Snig Hill, and another in Barker Pool.

THE LONDON SANITARY AND HYGIENIC ENGINEERING COMPANY (LIMITED), started with a capital of £5,000, in £1 shares; to carry on the business of general engineers and founders, makers of sanitary, drainage, and sewage appliances, hot-water apparatus, etc. The first subscribers (who take one share each) include:—E. J. D. Newitt, Queen Victoria-street, E.C., engineer; J. G. Harley, Caterham, engineer.

YORKSHIRE MEDICAL OFFICERS AT HULL.—On the 15th, a meeting of the Yorkshire Branch of the Incorporated Society of Medical Officers of Health was held at the Hull Town Hall. The members were first entertained to luncheon by the Mayor (Mr. Richardson), after which they paid a visit to the Humber Hospital Ship. A meeting of the Council then took place at the Town Hall, Dr. Whitelegge, of Wakefield, in the chair, when twenty-one new members were elected. A paper on "Methods of Disinfection" was next read by Dr. Spottiswoode Cameron, of Leeds, who described in detail the methods adopted at Leeds. "Prevention of Infection amongst School Children" was the subject of a paper read by Dr. Kaye, of Huddersfield. Dr. Johnstone, of Ilkley, afterwards read a paper on "Isolation at Home and in Hospital." Votes of thanks concluded the proceedings.

APPOINTMENTS VACANT.

INSPECTOR OF NUISANCES (Halstead), Feb. 26th.—The Halstead Local Board require an Inspector of Nuisances, subject to the sanction of the Local Government Board. Salary £70 per annum. The person appointed will be required to devote his whole time to the duties of the office. Applications, accompanied by not more than three copies of recent testimonials, are to be delivered to Mr. Robert Morton, clerk, Halstead, by 26th inst. Selected members may be required to attend the Board meeting on March 5th at 11 a.m.

INSPECTOR OF WEIGHTS AND MEASURES (Wakefield), March 2nd.—The County Council of the West Riding of Yorkshire require an Inspector of Weights and Measures; salary £150 a year, exclusive of travelling expenses. Applicants must state age, past experience, whether certified by Board of Trade, and furnish not exceeding five original testimonials. Applications to be sent in by March 2nd. For further particulars apply to Mr. W. Vibart Dixon, Office of Clerk of Peace and County Council, Wakefield.

INSPECTOR OF WORKS (Plymouth), Feb. 26th.—The Corporation are prepared to receive applications for the post of Inspector of Works. Salary, £3 per week. Candidates must have had experience in the construction of brick sewage tanks, concrete, dock, and tidal works generally. Applications, stating age and experience, and enclosing copies of three recent testimonials, not later than the 26th day of February inst., endorsed "Inspector of Works," James Paton, borough engineer and surveyor, Municipal Offices, Plymouth.

MEDICAL OFFICER (Paddington), Feb. 26th.—The Vestry is prepared to receive applications from duly-qualified Medical Practitioners, at a salary of £600 per annum. Age not to exceed 35 years. Applications, on or before Monday, the 26th inst. Frank Dethridge, vestry clerk, Vestry Hall, Harrow-road, W.

ROAD FOREMAN (London, N.), Feb. 26th.—The Tottenham Local Board require the services of a thoroughly competent Road Foreman. Aged between 30 and 45. Wages to commence 37s. 6d. per week. Apply in own handwriting, stating experience and qualifications, with copies of three recent testimonials, to Mr. P. E. Murphy, C.E., engineer and chief surveyor, 712, High-road, Tottenham, N., by 26th inst. Three temporary gangers acquainted with drainage and road work are also required. Wages 30s. per week.

SANITARY INSPECTOR (Baintree), Feb. 24th.—The Authority invite applications for the appointment of Sanitary Inspector at a salary of £100. Application by letter only, in candidate's own handwriting, stating age, which must not be more than 45, experience, and present employment, accompanied by three testimonials of recent date, on or before Saturday, the 24th inst. Fred. Smoothy, clerk, Baintree.

SUPERINTENDENT OF DWELLINGS (London), Feb. 24th.—The London County Council invite applications for the position of Superintendent of the dwellings erected for the working classes. The remuneration will not be less than £1 per week, with quarters, gas, and water free, and in special cases will be on a higher scale. There will probably be two appointments made within the next three months, and suitable candidates will be selected for future appointments. Candidates must not be less than 27 or more than 50 years of age. Forms of application and particulars of the appointments, and of the conditions under which they are held, may be obtained either by applying personally, or by sending a stamped addressed foolscap envelope to the Estates and Valuation Department, 17, Spring-gardens. Applications must be addressed to Mr. H. de la Hooke, clerk to the Council, Spring-gardens, and delivered by 10 a.m. on 24th inst.

THE PADDINGTON ANALYST ON LONDON MILK.

IN his report for December quarter, 1893, Mr. Stokes says:—In regard to the milk samples we may note the sources of this adulteration. From the railway stations 79 samples were taken as the milk came direct from the country farmer; 13 of these samples, or an average of 16 per cent., proved to be adulterated. From shops, on week-days, 33 samples were obtained, of which seven samples, or 21 per cent., were adulterated. On Sundays, ten samples were purchased in shops, and four of these, or 40 per cent., were adulterated. From itinerant milk vendors in the streets, 15 samples were procured on week-days; of these one sample, or 6½ per cent., had been tampered with. From street vendors on Sundays 54 samples were taken, and 15 of these, or 27 per cent., were found to be watered or skimmed. From this it is evident that on ordinary days one may expect to find one out of every six milks that are purchased to be adulterated; while on Sundays, the probability is that about one out of every three milks has been tampered with. Sunday with the poorer classes is a great day for preparing milk puddings; no wonder then that these do not always turn out as they are expected, and the unlucky housewives marvel as to whether this was the fault of the oven or whether they did not put enough eggs in the pudding. Besides these milks which were undoubtedly adulterated, there were also a certain number which only just passed as genuine, but which more probably had been slightly watered or skimmed so as to bring them down to the level of very poor milks.

The London milkman, however, cannot plead guilty to all this adulteration, since we find that "rural simplicity" is answerable for some 16 per cent. of the adulterated samples of milk. It is astonishing the quantity of water that comes to London not brought thither by the water companies!

CORRESPONDENCE.

FOOD QUERIES.

QUESTION.—Has an analysis of Frame Food ever been published, and is it what it professes to be?—Yours, etc.,

BRAN-MASH.

ANSWER.—Yes, one was made by Dr. P. F. Frankland of Frame Food Extract as follows:—

	Per cent.
Albuminoids	21.40
Sugar	12.30
Dextrine	22.60
Starch	13.00
Other organic matter	10.43
Phosphoric acid	3.68
Potash	4.24
Iron and other minerals	2.77
Water	9.58
	100.00

[We are making an examination of the Frame Food Diet, and shall deal with it in an early issue.—EDITOR.]

GOSSIP ON MALT VINEGAR.

To the editor of FOOD AND SANITATION.

DEAR SIR,—In FOOD AND SANITATION of the 10th appeared an extract from the report of the Official County Analyst for Northumberland, in which he angrily denounces the action of the chemists of Somerset House as being "incorrect and mischievous." It strikes one that the inaccuracy and mischievousness is not wholly monopolised by the department he attacks, but is manifest also in his magisterially expressed opinions, as reported in your paper, and likewise in a communication to the Society of Public Analysts made through the secretary, both being substantially identical, in which he asserts that malt vinegar should "be made from malt, and malt only." I don't think that anyone would go out of their way to

dispute this statement, though beer brewers, who legally use cane sugar, would probably differ from him, as their beers are generally recognised as "malt liquors." But, unfortunately, he is not content with his own dictum as comprised in the sentence, but decides that malt is sprouted barley alone. There is no indecision here, no question of doubt. Dictionaries and text books which have said "malt can be made from any grain," are apparently in error; an error, by-the-by, which is shared by many chemists of standing. Maize, rye, rice, wheat, and other cereals which have been malted (I apologise, I should have said germinated) and sold as malt for years past, are not, in this analyst's opinion, malt at all, and vinegars made from them are not malt vinegars, and makers should be compulsorily called upon to prefix the name of each grain to the article offered for sale. Happily for the peace of mind of those concerned in this industry the official analysts are not all of this unyielding disposition, and entertain broader and more liberal views. In a few years people will scarcely credit the fact that a vinegar manufacturer felt called upon, in a case which he had to defend, to engage well-known scientific authority to prove that "rice is a grain." I have already in my previous communications on malt vinegar spoken of the hydrolyses of the starch constituent of cereals, and of the hydrolyst. I have also written of the "aroma of its own, much prized by connoisseurs," but possibly (?) FOOD AND SANITATION did not reach the analyst for Northumberland, or if it did my letter was not read. However, sir, I won't ask you to sacrifice space for me to go over that ground again, but will content myself by saying that it is generally considered that the use of ungerminated grain in conjunction with the sprouted gives, if anything, an excess of aroma by reason of the formation of more fusel-oil. Other analysts present at the discussion on vinegar at which Mr. Pattinson's communication was read, submitted that unsprouted barley might be used in the production of "malt vinegar," but would exclude the use of all grain; while another member of the S.P.A. would not admit the legitimacy of the removal, by the maker, of impurities which acted detrimentally to the keeping qualities of vinegar.

This opinion, I am glad to say, was not generally supported, and was notably differed from by the speaker following, a member well known to all in the profession.

I would like analysts who go in for re-modelling any industry out of existence to look at the price lists of the wholesale chemists who supply them with re-agents, and they will probably see chemicals quoted for "technical" use, and others quoted as "pure for analysis," the "purity" in the latter case being absolutely necessary, while the first is a good commercial article, but possibly not absolutely chemically pure.

The consumers of vinegar and the manufacturers (in chief measure) occupy one level platform. One requires to purchase and the other desires to produce a commercially pure article, and distribute it as such.

Some time ago there was a rumour of the probable retirement of the principal chemist of Somerset House; but the honest maker has been so disturbed in his special art, that he would look upon it as a disaster if the present chief were replaced by one who refused to admit a distinction between technical and chemical purity; and though at the beginning of the action against vinegar "fakers" or "bogusers" most of the genuine makers were ready to help put down the bogus vinegar, they begin to almost regret their willingness, for the result has been comparable to the frog's prayer for a new ruler, and getting King Stork.

I could and would go more into details in illustration, but while acknowledging your past kindness in giving space in your journal to previous matter, I am afraid to trespass too much on your good nature. Before concluding, allow me to add that instead of furthering the extension of this old British industry, the action of some of the official analysts will, if successfully persisted in, accomplish its extinction. I am, however, glad to say that outside the official sphere the opinion held by public analysts of undoubted ability is much opposed to the late proceedings.

Yours faithfully,
EXPERT.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

D. LENNOX & SONS.

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Bonded and
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LENNOX'S WHISKY

36/-
42/- 48/-
PER DOZEN CASH.
Delivered within London
Carting Circuit, or Carriage
Paid to nearest Railway Station
in Great Britain.
Do not drink Blends of Malt Grain
and Potato Spirit.
Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.

Food and Sanitation.
SATURDAY, MARCH 3RD, 1894.

ARSENIC IN GLYCERINE.

IN consequence of the public attention which we called to the fact that the glycerine on sale in the Midlands just prior to the Maybrick trial contained arsenic in notable proportions, attention has been directed to this subject. Quite recently Mr. Thomas Fairley, public analyst, Leeds, discovered that out of eight samples of glycerine analysed, five contained arsenic. *The Pharmaceutical Journal* last week published experiments by Dr. B. H. Paul and J. A. Cownley, who say:—"The presence of arsenic in glycerine has been on several occasions a source of alarm, and the probability that the method of manufacture adopted in the production of glycerine may in some instance give rise to impregnation with more or less arsenic is sufficient to give importance to the subject. Quite recently it has been stated by Mr. Fairley, the public analyst for Leeds, that he has found appreciable amounts of arsenic in the glycerine of commerce. We have, therefore, obtained several samples of glycerine, and examined them for arsenic, with the results stated in the accompanying table:—

Sample No.	Result of Test applied to the glycerine (1 C.c.) direct.	Result of Test applied after destroying Sulphur compounds by Iodine.	Fraction of a milli-gramme of metallic arsenic in 1 C.c. of glycerine.
1.	Stains in 10 minutes.	Stain as before.	
2.	" 16 hours.	"	
3.	" 16 "	No stain in " 16 hours.	·01
4.	No stain in 16 hours.	"	—
5.	Slight stain in 16 hours.	No stain in 16 hours.	1
6.	Slight stain in 1½ hours.	Slight stain in 16 hours.	·001
7.	Slight stain in 1½ hours.	Slight stain in 16 hours.	·001
8.	Stain in 30 minutes.	Stain as before.	·01

"The samples examined were less numerous than we intended, owing to some promised supplies not having been received, but

Fretful Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates *extracted* from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers find that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., 1-lb. sample in handsome enamelled box sent free, on receipt of 3d for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands, Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol, Cyprus: "I have never found anything to come up to it for neuralgic and Rheumatic Pains."

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.
Awarded 60 Gold and Silver Medals and Diplomas.

those above referred to represent the produce of several makers, and it will be seen that, with the exception of No 1, the amount of arsenic was never sufficient to be a cause of apprehension, while in three of the eight samples there was no indication of the presence of arsenic. The sample No. 1 was of a character not likely to be met with in ordinary retail trade, being, in fact, the crude material used in the manufacture of nitro-glycerine. The largest quantity found in the samples Nos. 2 and 8 amounted to only one grain of metallic arsenic in fourteen pounds of glycerine.

"It appears, therefore, that with the exercise of due care in applying the test above described, there is really no difficulty in obtaining glycerine practically free from contamination with arsenic. But it is desirable that this point should be determined by applying the test in all cases.

"The ordinary form of Marsh's test is inapplicable for the detection of minute quantities of arsenic, and with all but one of the samples examined we failed to obtain satisfactory indications of the presence of arsenic in the glycerine, which was subsequently found to contain it.

"The method of testing employed for this purpose was a modification of that introduced by Gutzeit, which consists in allowing the gas slowly evolved from sulphuric acid and zinc, in contact with the liquid supposed to contain arsenic, to act upon filter paper moistened with a saturated solution of argentic nitrate and placed over the mouth of the test tube in which the reaction takes place. If arsenic is present, arseniетted hydrogen is formed, and a yellow stain is produced upon the filter paper. For application to glycerine this test has been modified by Vulpius, Flückiger, and Siebold. Hydrochloric acid is substituted in place of sulphuric, and mercuric chloride is used instead of argentic nitrate. A mixture of two cubic centimetres of the glycerine to be tested with 5 C.c. of hydrochloric acid (1 to 7) and 1 gramme of pure zinc is placed in a long test tube, the mouth of which is covered with a disc of filter paper previously moistened with one or two drops of mercuric chloride solution and then dried. If arsenic be present in any considerable amount a yellow stain is produced upon the filter paper after a few minutes, and it subsequently becomes darker. When the amount of arsenic is very minute it is necessary to allow the action to continue for a longer time. Fifteen minutes is considered by Mr. Siebold sufficient for practical purposes, and if no stain is produced in that time the glycerine may be regarded as free from arsenic. But though extremely small quantities, such as 1/1000th or 1/1000th of a milligramme of arsenic, are indicated by this test, we think it is preferable to allow a longer time to elapse in testing.

"If the samples examined can be taken as similar to the glycerine generally met with, it would appear that in regard to the amount of arsenic there has been a great improvement since 1890, when Mr. Siebold's paper was published. He then found 1 part in 6,000 or 4,000 and even more, whereas the arsenic in samples Nos. 2 and 8 amounts to only one part in one hundred thousand, and that in the samples Nos. 6 and 7 to only one part in a million.

"The circumstances that zinc frequently contains a trace of sulphur which would be eliminated, by the action of acid, in the state of sulphuretted hydrogen, may exercise a disturbing influence in the application of the test. In such a case the quantity of sulphuretted hydrogen will generally be so small that it does not produce a black spot on the filter paper impregnated with mercuric chloride, but a spot having almost the same colour as that produced by arseniatted hydrogen. In this way a sample of glycerine that is perfectly free from arsenic may appear to be contaminated.

"For this reason it is always advisable to repeat the experiment, adding to the mixture before the zinc is put in some starch mucilage and a small quantity of iodine solution until a blue tinge is produced. In this way the formation of sulphuretted hydrogen is counteracted. Mr. Siebold has, however, pointed out that the use of iodine for this purpose requires caution, for if too much iodine is added for the destruction of sulphur compounds it interferes with the reaction, and may lead to erroneous conclusions.

"In every instance it is of course desirable in testing glycerine for arsenic to make a blank experiment, so as to be absolutely certain that neither the hydrochloric acid nor the zinc employed contains any trace of arsenic."

THE VARIATION OF SECRET REMEDIES.

THE *Pharmaceutical Journal* says:—"In two recent cases of prosecution under the Pharmacy Act, the evidence given by chemical analysts as to the amount of morphine contained in the preparation to which the cases related, shows that in this important particular there is very considerable variation, the quantities found in a fluid ounce differing from one-tenth of a grain to a quarter and four-tenths of a grain. It appears, therefore, that, in addition to the danger attending the use of medicinal preparations without a knowledge that they contain poisons of such potency as morphine, etc., there is a further danger likely to arise from such preparations being at one time much stronger than at others. This circumstance was lately referred to by the *British Medical Journal* as constituting a strong argument in favour of measures for compelling disclosure of the composition of all proprietary medicines upon their labels. In the case of those containing poisonous or potent ingredients such a disclosure is certainly desirable as a warning against improper use, and if, as our contemporary remarks, the danger of concealed poison is supplemented by a further danger arising from variation in the composition of proprietary medicines, it must be evident that such a regulation is doubly necessary."

Our readers know our opinions upon this question. We have no sympathy with secret preparations, and if the Pharmaceutical Society were attacking them to suppress their sale entirely we would support the movement heartily, but it is not. It is seeking to secure their sole sale for the chemist under the untrue plea that a secret preparation is less dangerous when sold by a grocer than by a chemist. As a part of the game to *exploit* the grocer, this further untrue statement is adduced about variations in quantity of morphine. We say untrue, because there is not a shadow of real foundation for the assertion, neither the *Pharmaceutical Journal*, nor the *British Medical Journal* can adduce actual analytical proof to support the statement, for the very good reason that no such proof exists. The patent medicine and quack nostrum craze is a gigantic evil, but let us divest our minds of cant and, if we attack it at all, let us do so upon honest logical bases. The Pharmaceutical Society well knows and the *British Medical Journal* ought to know that this kind of trickery is not suppressing an evil, but a dodge to "corner" a profitable trade for the pharmacist who, by-the-by, is generally the inventor and wholesale vendor of the quack nostrum; and that the *British Medical Journal*, our courts, and the public are being most egregiously gulled both in this matter and the movement to confine the sale of carbolic to the chemist.

THE GROCER DID NOT ADVERTISE.

A FEW days ago a Pittsburg citizen cut into a pound of butter which he had purchased at a grocery whose proprietor did not advertise, and found therein a small tin box, which contained a piece of paper bearing the following, written in a neat feminine hand:

"I am a girl of 18 years, good-looking and an excellent housekeeper. Should this be found by some unmarried Christian gentleman, will he please write to the following address," etc.

The finder, being a bachelor, decided to unravel the affair, and succeeded, only to destroy the romance. The girl who had written the note had died many years ago, leaving an aged husband and a grown family.—*Chicago Grocer*.

JOHN OAKEY AND SONS.

A GOOD argument against those who indiscriminately decry the conversion of industrial businesses into limited liability companies is provided by the report of John Oakey and Sons. It is the report for the first year of the business under the limited liability system and it must please those who subscribed its capital. The report recommends a dividend of 10 per cent. and points out that, notwithstanding the exceptional depression experienced in almost all trading concerns during 1893, the sales of the business are quite equal to those of 1892, from which it may be reasonably inferred that, had the past year been a normally prosperous one, the business done would have shown a considerable increase.

DETECTION OF ADULTERATED LINSEED OIL.

AT the annual meeting of the National Paint, Oil, and Varnish Association held in November, the subject of adulterated linseed oil provoked considerable discussion. Linseed oil is liable to be adulterated in a variety of ways. Of foreign seed-oils, cotton and nigger-seed oils are most used; mineral and resin oils, often both together, are largely used; and resin itself is also added. The density of genuine raw linseed oil lies between 932 and 937, while that of the boiled oil varies from 939 to 950. Mineral and all foreign seed oils are lighter than linseed oil, while resin and resin oils are much heavier. By the judicious use of a suitable mixture of mineral and resin oils, extensive adulteration can be effected without alteration of the density. The solidifying point of pure raw linseed oil is about 27° C., but samples containing other seed oils solidify at a higher temperature. The same remark applies to the relative fusibility of the fatty acids, those prepared from cotton-seed oil having an exceptionally high melting point. The iodine-absorption is a valuable test for and method of determining the proportion of a seed oil in linseed oil, provided that other adulterants are absent. This raw linseed oil assimilates from 155 to 160 per cent. of iodine, while cotton-seed oil takes up only 105 to 109 per cent. Certain fish oils absorb fully as much iodine as does linseed oil.

The rise of temperature on treating the oil with strong sulphuric acid is also a useful test for linseed oil, which gives more heat than any other seed oil, though it is equalled and even exceeded in this respect by some of the fish oils. The sulphuric acid colour test is a useful indication of the purity of linseed oil. With a genuine sample a dark-brown clot is formed; if resin oil or fish oil be present a reddish-brown spot quickly forms, which in the former case retains its red tint for a long time, whilst a peculiar scum forms over it. This test is also applicable to the detection of resin oil in boiled linseed oil, while the reaction is more rapid. Fish oils may also be detected by the darkening produced by passing a rapid stream of chlorine through the oil, and by the reddish colour produced by boiling the oil with an alcoholic solution of caustic soda. They are further recognisable by the taste and the smell of the sample on warming, and by the peculiar scum which rises when such oil is heated to boiling. As a test for cod oil, which is not infrequently used in the case of linseed oil intended for the preparation of printing ink, A. Morell recommends the following test: 10 grammes of the oil are agitated with 3 grammes of common nitric acid, and the whole left to stand. With pure linseed oil the colour will change during the stirring to a sea-green colour, afterwards becoming dirty green-yellow, whilst the acid assumes a light yellow colour. In the presence of even 5 per cent. of cod oil, after standing some time the oil is said to acquire a dark brown colour, while the acid is tinged orange or dark yellow, according to the proportion of the adulterant present. A similar test has been described by A. Conrath for the detection of resin oil.—*Pharmaceutical Era, U.S.A.*

BEDFORD FOOD AND DRUGS ACTS.

IN our contemporary the *Bedfordshire Times* we read that at the meeting of the Town Council, the town clerk presented the report of the analyst, which contained the one word, "*nil*." The last Local Government Board's report gave for Bedford, population 28,023, 12 samples analysed for an entire year, and they were all milk. No sample of butter, lard, coffee, cocoa, jam, drugs, etc., has been analysed during two years.

The Local Government Board has recently been writing to some of the towns in which the Food and Drugs Acts are being burked. If a remonstrance has not been sent to Bedford it is not because it is unneeded.

MILK AND CHEESE AS BRAIN FOOD.

Is skim milk or cheese brain food? A paper by M. Bécamp, which M. Freidel has just read to the Paris Academy of Medicine, gives an affirmative answer. M. Bécamp, it seems, has for some time been devoting himself to the study of casein. He has found that it chemically differs from all other albuminoids with which he is acquainted. One of its properties is, when burnt pure, to make no ashes. He experimented on burnt casein, not with the view of coming to the conclusion he now enunciates, but to an opposite one, namely, that there is no phosphorus in casein. In a number of experiments he found that absolutely pure casein contains 753 parts out of 1,000 of organic phosphorus. He has also demonstrated the presence in casein of sulphur, and therefore that this substance is made up of carbon, hydrogen, nitrogen, phosphorus, sulphur, and oxygen. Milk and cheese are accordingly brain restorers.

THORNABY-ON-TEES AND ADULTERATION.

THE report of Mr. A. C. Wilson, F.C.S., says:—"During the year ended on January 11th, 1894, the samples submitted were: 8 milk, one was adulterated and two of inferior quality; 3 whisky, one adulterated; 1 sample of vinegar, genuine. Taking the population of Thornaby-on-Tees as 16,000, the number of samples of all kinds taken under the Food and Drugs Act is practically one sample for every 1,333 persons."

The Local Government Board's recommendation is at least one sample per 1,000, and this is too low. The Medical Officer, Dr. Thomas Watson, says:—"No legal action has been taken on these reports, except to warn the delinquent milk and whisky vendors of future retribution in case of default to supply the unsophisticated articles."

It would be interesting to know why no samples of butter, lard, ginger, etc., were analysed.

HOW THEY MANAGE THE FOOD AND DRUGS ACT IN WATERFORD.

AT Waterford Petty Sessions, High-Constable Mahony prosecuted Mary Josephine Carrick for selling adulterated butter. Being cross-examined by Mr. J. A. McCoy, solicitor, he said:—On January 10th, when he visited defendant's premises, he had other samples of butter in his possession. He got these samples in other places. He did not get samples in three places—he only got one and was refused at the other. He was aware that the statute under which the proceedings were brought was penal. He knew that all the requirements of the statute should be strictly complied with, and complied with them as well as he could. *He had not read the statute for many years, but read it since these proceedings were instituted.* He admitted that he did not divide the samples produced into three parts. He gave defendant one portion and took away the other two portions as a whole, and divided them afterwards, retaining a portion which he had since kept in a cup.

Sergeant Malone, on being sworn, stated that by direction of the town clerk he proceeded to the establishment of Mr. Mernin, provision dealer, and inquired as to the portion of a sample left by High-Constable Mahony. He was supplied with the third sample which the High-Constable had procured, and forwarded it for analysis to Sir Charles Ceamron. He produced the analysis of this sample, which stated it to be pure butter, and to contain only 7 per cent. water. The defendant stated that she was positive the sample given the High-Constable was not adulterated. Some further evidence having been given, the Bench fined the defendant £1 and costs. Judging by the evidence of High-Constable Mahony that he had not complied properly with the provisions of the Act, these magistrates had no right to inflict any penalty, but ought to have dismissed the case.

MILK WITHOUT MILK.

MILK is one of the triumphs of rogues, and its manufacture is one of their most criminal practices, because the health of sick persons and children is thus compromised. M. H. Nott, in a very exhaustive work published by the American Chemical Society, enumerates all that is put into milk in the United States and elsewhere. Alas! the statements are mournful and amazing. Firstly, water: this is the least dangerous of the unlucky elements; on condition, however, that this liquid does not contain microbes, and it frequently does, not more, however, than any other water in spite of certain famous statistics. Chalk, which thickens the milk and destroys acidity; when not acid, chalk is put in just the same. Starch of barley and rice, almond and hemp-seed emulsions, which thicken milk and give it a creamy appearance, removing the blue tint from water. All this can be detected with a little tincture of iodine, which turns violet in this abominable mixture, and acetic acid, which coagulates the casein and imprisons the starch added. Cane sugar, gum arabic, dextrin, or tragacanth. This is to sugar the milk and bring it to its normal density in spite of water added. Tincture of iodine turning violet causes suspicion, and then chemical analysis completes the defeat of scoundrels. Salt or chloride of sodium is fraudulently employed to increase the density of the milk and heighten its flavour. Gelatine and fish glue, also carbonate and bi-carbonate of soda, prevents the milk thus treated from turning sour. Calves, sheep's, or horse's brains thicken it like cream. The microscope reveals the presence of these last. All this is abominable to enumerate, and still more so to drink. Hygienic authorities cannot be too active in arresting this unpleasant system of preparing food. The ordinary consumer has neither time nor means to detect the fraud. When we reflect that persons on their death-bed are fed with a milk diet at a time when fraud is on foot to this extent we are appalled; what a regimen for the closing days of life—fish-glue, horses' brains, tragacanth, gum, and hemp-seed!—*L'Illustrie Soleil du Dimanche.*

CO-OPERATION v. PRIVATE TRADERS.

THE JARROW AND HEBBURN CO-OPERATION FINED FOR ADULTERATED COCOA.

THE Jarrow Town Council met on February 1st, and the Sanitary Committee recommended that proceedings should be taken in one case of a cocoa that contained 35 per cent. sugar, 15 per cent. starch, and 50 per cent. cocoa.

Three active co-operators are members of this Council, and one of them, a Mr. Roberts, moved that no proceedings be taken, because, said he, "The percentage of sugar and starch was very small indeed considering the weight of the packets. He contended that whatever the ingredients were, whether they were arrowroot or sago, if they were not detrimental to health they would be wrong in prosecuting the person who sold the mixture, and the law would not allow it."

It is the first time, we must confess, that we have heard 50 per cent. described as a *small percentage*. A Mr. Chalmers, however, seconded this proposal, a proceeding which evoked some strong expressions of opinion from other members of the Council, who protested against any attempt to "burk" the recommendation. One councillor, a Mr. Harris, said that Councillors Roberts and Chalmers professed to be Labour representatives, and yet they wanted to quash the action of the committee, taken in the interest of the public, more especially the working classes, who were the principal consumers of cocoa.

Following this, a Mr. Graham said that if the Council authorised the prosecution a conviction could not be obtained, and strongly endeavoured to dissuade the Corporation from prosecuting. These councillors divided the meeting upon the question with the result that the attempt to quash the case only received their own votes, the whole of the other members present being in favour of a prosecution. The case, however, has had a curious sequel. It came before the Jarrow Bench on the 12th ult., when it turned out that the parties charged with the adulteration were the Jarrow and Hebburn Co-operative Society, of which body two of the town councillors who thus sought to prevent a prosecution being instituted are active members, whilst the third, Councillor Graham, is actually the secretary to the Co-operative Society. After a lengthened hearing the magistrates decided to fine the Society £2 and costs. Now this case needs in the public interest some consideration. It must be manifest that an official will hardly dare to undertake the enforcement of the Food and Drugs Acts when he has thus brought plainly before him the fact that his action is viewed with strong disapprobation by a section of those upon whom depends his tenure of office. We do not believe for one moment that so strong an effort would have been made had it been a retail trader who was about to be prosecuted. *As a matter of fact, these sturdy co-operators allowed another recommendation to prosecute for 8 per cent. water in milk to pass without any protest—but this was against a private dealer.* We make a present of these facts to Mr. H. O. Arnold Forster, M.P., for use in the new edition of his "Laws of Everyday Life." They would appear as a refreshing oasis of truth in a desert of twaddle and untruths. We can guess the use Mr. Arnold Forster or Mr. Acland would have made of it had such an impudent effort been adopted to shield some private trader, so we invite these hon. gentlemen to step out, to be manly if they can, and say what they think of this sort of co-operation.

DANISH BUTTER ADULTERATION.

IN Denmark butter adulteration is a very risky thing, the stringency of the laws against this particular kind of falsification being more severe than in any other country. Nevertheless the rare occurrence of a Dane mixing margarine in butter has recently taken place, a retailer mixing 30lb. of butter with 45lb. of margarine. The culprit has been sentenced to 10 days' imprisonment on water and bread, to publish his name and offence in the newspapers, and to have his mixture confiscated.

HORLICK'S
MALTED
For Infants
and Invalids. **MILK**
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

THE ILL-EFFECTS OF TOBACCO ON THE THROAT AND NOSE.

By WILLIAM T. CATHELL, M.D., BALTIMORE, Md.

EARLY in my professional career I attended Mr. McG., a stout, middle-aged man, who died from the abuse of tobacco in smoking and chewing. The history of this terrible case was briefly as follows: He was a brass-finisher by trade, and purposely taught himself to use tobacco, under the belief that it was a prophylactic against the harmful vapours unavoidably inhaled in that occupation. From the moderate use of tobacco, he gradually drifted into the slavish habit of chewing and smoking strong plug tobacco all the time, except for a period of about four minutes taken for breakfast, five and a quarter minutes for dinner, and three and a third for supper, even sitting up in bed several times every night to chew or to whiff his favourite short-stem clay pipe.

The result was that in course of time a warty-looking pimple or growth formed under the tongue, just posterior to the sublingual glands, which gradually enlarged, ulcerated, and formed a deep sulcus at the root of the tongue, which mass gradually enlarged and became more and more malignant, until every fibre and every papilla of the tongue became diseased, and enlarged to such a degree that the horrid swollen mass protruded from the mouth, with its tip and anterior third fissured and angry.

The gums became red, scurried, and unusually separated from the teeth, many of which loosened and fell out; his breath was loaded with fœtor; the lumen of the throat was encroached upon; deglutition became more and more difficult, and was finally impossible, which caused a constant dripping of saliva, resembling ptyalism. The glands of the neck, both anterior and post-cervical on both sides, next became infiltrated and enlarged, but luckily did not ulcerate; after he could not swallow, his adipose tissue was completely absorbed, his muscles all wasted, and he became fearfully emaciated, with complexion bronzed, eyes sunk, and entire countenance hideously distorted; his blood was no longer fully oxygenated, his breathing became asthmatic, and, added to all else, he could speak with only a pitiful, inarticulate sound, and finally, after protracted, unappeasable torture, death came to his relief October 11th, 1886, in his fifty-fourth year.

Microscopic examination of a section of the sublingual mass revealed the fibrous stroma and the characteristic alveolar structure and the epithelial cells of cancer.

His death certificate should have been *Tabaci felo de se*, effected by impregnating the glands of the tongue, mouth, and throat by an almost continuous application of the juice and smoke of King James' "baneful weed."

Encountering this case so soon after the death of General Grant, in July, 1885, I directed my attention early in practice to the harm that may flow from the abuse of tobacco, and since adopting a speciality that brings me into constant contact with the throats and noses of smokers and chewers of every age and physical condition, I have continued in this enlarged field to note its effects on these parts, and while I fain would be neither a bigot nor a partisan in any tobacco controversy, I shall in this paper attempt to sum up the results of my study and experience.

Smoking and chewing, like malaria, alcohol, coffee, tight-lacing, late hours, high-heeled French shoes, and other debatable agents, do not affect all alike, and some devotees suffer so little from their use, and within certain limits, even from their abuse, as to be practically exempt from harm.

I know a man whose pipe is seldom out of his mouth except when he is eating or sleeping; and another who lights one cigar by the stump of another all day except when he is eating, who, when he is where he cannot smoke, is chewing, and habitually sleeps with a quid in his mouth, without any appreciable injury; and each of you knows robust and healthy lovers of the weed, leading active out-door lives, who can smoke and chew any and every kind of tobacco, good or bad, with apparent impunity.

But, notwithstanding such exceptions, I am fully convinced that, as a rule, the majority of all who chew constantly or smoke more than two or three cigars, or pipefuls of tobacco a day, venture on dangerous ground.

For these reasons I would divide the patrons of tobacco into three classes: 1st, Those strong and healthy persons who can use it, and, within certain limits, abuse it too, without injury; 2nd, those who can use it in moderation, with little or no discernible injury, but suffer if they abuse it; and 3rd, those to whom tobacco is toxic, who must suffer if they attempt to use it in any way at all.

The last two classes fall within the scope of this paper, and I have seen so many distressed conditions of the upper air passages created or made worse by it, that I have little hesitation in attributing the existence of a considerable proportion of important throat and nasal diseases that increase, or remain obstinate, to the use of tobacco by these two classes.

We all know that nicotine and the dark brown empyreumatic oil produced in burning are tobacco's two most harmful ingredients, and that to this oil is due the stale, pathognomonic smell of the old pipe and of the stale stamp.

Nicotine is present in about two and a-half per cent. in the mildest Havanna tobacco, and ranges up to about seven and a-half per cent. in the strongest Virginia.

Notwithstanding the fact that the properties of tobacco, chemical and physical, differ in chewing and in smoking, and also with the variety—and in smoking, also with the method—yet the

pathological action of tobacco on the upper air passages is somewhat the same, no matter in what form its ingredients are brought in contact with them; but as a general rule, smoking is worse, because tobacco burning either in cigar, cigarette, or pipe, not only imparts everything natural to tobacco, but also adds the oil and other products of combustion, and discharges them hot, into the mouth and upper air passages; and the harder the burning weed is drawn in, the more deeply these go, and thus the hot smoke, impregnated with nicotine and the oil, comes in contact with every part of the throat and nose.

The smoker takes in less of the nicotine, but more of the oil, etc.; the chewer, little or no oil, but more of the nicotine; but, chewing and smoking involve spitting or swallowing the saliva, and both impregnate all the fluids that come into contact with the mucous linings with tobacco. On the whole, however, I have seen chewing seriously affect as many persons as smoking; but were the mass of smokers to indulge that habit as constantly as the mass of chewers do, its ill-effect on the smoker's air passages would be much more frequently seen, and we would much oftener find the mucous membranes of the patrons of the cigar, cigarette, and pipe in a thoroughly diseased condition, because these not only keep large quantities of the harmful constituents in continuous contact with the delicate mucous linings of the parts, but also because inferior grades of strong tobacco may be, and are, used in preparing smoking tobacco; and the burning of certain salts of potassium existing in it, and the heavy heated smoke, are all added to its own irritating power.

In chewing, one escapes the empyreumatic oil produced in burning, which would always be terribly toxic to the mouth and upper air-passages were it not for the fact that while smoking there is an abnormal secretion continually taking place from the relaxed mucous membranes, which, although it makes a good vehicle for conveying the nicotine, yet prevents more than a fraction of it from being absorbed by these membranes, the balance being either expectorated or swallowed; and we all know that spitting is a waste, and swallowing these tobacco-tintured secretions, either to prevent this waste of saliva or because there is no convenient place to spit, is very harmful to the whole economy.

Of course, the one who both smokes and chews risks all the dangers that tobacco can present.

Whether the pipe, cigar, or cigarette instils most oil and nicotine, and which is safest to smoke, are also questions of importance. Short pipes and thick dumpy cigars are most apt to induce cancers, etc., and no habitual smoker should smoke his cigar down to the very end, but should throw the last third away, as analysis has shown that the arrested nicotine, nicotianine, and empyreumatic oil are there, all thickly accumulated. Using pipes with long stems, and smoking all cigars and cigarettes through smokers, enables the wise to escape much of the poison and heat, and robs smoking of half its harmful powers; and the later in the day one smokes and chews, the less it injures, and the earlier in the morning the smoke or chew is taken, the more it inhibits nerve power and nutritive activity; and, further, no one should shut himself up in a small room at any time to smoke and create around himself a cloud of nicotine, for an increased amount of poison is then condensed on the delicate mucous membrane of the whole respiratory tract, and is thence taken into the entire system.

Cigarette smoking makes a delicate person's lips and face lose their natural healthy hue quicker than any other mode of using tobacco.

Tobacco is a potent agent that certainly is capable of creating a cachexy that interferes with both growth and repair, and I find that all inflammatory affections and lesions of the throat and nose, and especially those of specific origin, are more persistent and recover more slowly in persons suffering with what I might call scurvy; and not only the specialist, but also the general practitioner, knows how difficult it is to heal lesions, whether specific or benign, in the mouths, throats, or noses of those who either chew or smoke excessively, or rub snuff; and a scratch, pimple, blister, or wart, or a sore lip, mouth, tongue, or throat, may be made cancerous by keeping it bathed in tobacco juice or smoke, especially if the person is suffering with chronic tobacco intoxication of his system. In fact, it is scarcely possible to heal a sore or ulcer in the mouth, throat, or nose of one who persists in chewing or smoking.

(To be continued.)

MORE WOOD VINEGAR.

MR. THOS. PEPSON, grocer, 1 and 2, The Steyne, Bognor (Sussex), was summoned at the County Petty Sessions on February 17th, for selling vinegar containing only 25 per cent. of malt vinegar. The inspector swore that he asked for malt vinegar. The cask from which it was drawn was labelled "Absolutely Pure." He did not see the words "Wood Vinegar," and was not aware there was such an article. For the defence, Mr. Stafforth said the cask from which the vinegar was drawn was labelled "Wood Vinegar—Absolutely Pure," and defendant possessed a guarantee to that effect from the manufacturer. The superintendent of police saw the barrel from which it was drawn, and knew what he was buying. The chairman asked Mr. Stafforth if he denied that malt vinegar was asked for by the superintendent of police, and Mr. Stafforth replied in the negative, but added that the superintendent knew what he was buying. The Chairman: Then you say that "malt" was a word which in his mouth had no significance whatever? Defendant was fined 6s. and costs.

SOMATOSE—A NEW FOOD PRODUCT.

By E. H. BARTLEY, M.D., BROOKLYN, N.Y.

THIS preparation is claimed to consist almost entirely of pure albumoses. It is prepared from meat, and is a light yellow powder without marked odour or taste. It is hygroscopic, and dissolves completely in hot and cold water. The solution has a faint alkaline reaction, and part of the substance is precipitated by careful neutralisation, from which we conclude that there is present a small amount of alkali-albumen. Most of the nitrogenous matter is in the form of albumoses, there being only about 5 per cent. of peptone present.

For practical purposes we may regard the new food-product as a highly nutritious preparation of meat, composed chiefly of albumoses, with a small amount of peptones. Professor Chittenden has recently published an analysis of Somatose, giving the following as its composition:—

Water.....	8.94 per cent.
Solids.....	91.06 " "
Mineral matters.....	6.95 " "
Total nitrogen.....	13.90 " "

Matters insoluble in—

80 per cent. alcohol.....	80.91 per cent.
Albumose.....	70.07 " "
Gelatose and gelatin peptone.....	8.03 " "
Peptone.....	5.01 " "

From this exhibition of its composition, and from the well-known results of physiological and clinical tests with peptones, we might expect good results from the use of Somatose.

Gerlach, Politzer, and others have shown that fully-digested meat preparations cannot be used long without producing diarrhoea and other digestive disturbances. My own experience has shown that after a few days patients develop a disgust for such preparations and decline to take them. The stomach becomes sick, the breath offensive, and they do not thrive well without other food. The greater the proportion of peptone in these preparations the less desirable, clinically, are they. This fact has become well known in the peptonising of milk for infants. They will not thrive on completely peptonised milk, even when they can be induced to take it, and hence no one now thinks of thoroughly peptonising milk for infants or invalids. The same is true of the cereals. They agree when partially digested. It is for these reasons that this new preparation has been put upon the market.

The clinical use of this food upon a variety of cases has borne out the expectation derived from its chemical composition.

The cases on which I have tried Somatose included two cases of carcinoma of the stomach, one of phthisis, one of gastric ulcer with dilatation, two of choleraic diarrhoea in infants with marked collapse, and one of gastro-enteric catarrh (summer diarrhoea).

In all cases the food was well borne and was retained when all other food was rejected. It was noticeable that in several of the cases, where there was complete anorexia, the appetite returned after from one to three days, and then the patients were able to retain and digest other food, rendering the further use of Somatose unnecessary. In no case did it produce nausea or diarrhoea. The case of phthisis pulmonalis, above mentioned, was suffering with troublesome diarrhoea, with occasional vomiting at the time of beginning the use of Somatose, but there was no evidence of an aggravation of the diarrhoea. The nutritive value of the food could be plainly seen in its effect upon the digestion and blood tension.

The effect upon the heart seemed to be more permanent than that of a stimulant, and I could but regard it as the result of a true nutrient action upon the heart muscle. I would explain its effect upon the digestive organs in the same way, i.e., by its furnishing nourishment to the mucous membrane of the stomach, as well as to the increased general nutrition.

From the limited experience had with it, I do not regard it as suitable for long-continued use, but it is especially useful in an emergency, when the digestive organs have failed to appropriate ordinary food, and for this purpose it has seemed to meet the indications more fully than any of the commercial peptones, or so-called peptones, tried by me. In three of the adult cases I compared the effect of Somatose with that of some of these peptones, and in each case with marked credit to this preparation.

The trial with infants was confined to two cases of typical cholera infantum, and one of summer diarrhoea, of mild type. All covered.

The first case was a second attack in the same child during the season. This attack was accompanied by convulsions, followed by alarming collapse, high internal temperature, and incessant vomiting. The food was begun at about nine in the evening. A half-teaspoonful was dissolved in a wine-glass of water and a teaspoonful of this mixture given every half-hour during the night. The effect was very gratifying. The restlessness, the rolling of the head from side to side, and throwing the arms about had ceased by morning, and natural sleep followed.

The child was then given a mixture of equal parts of milk and water with a half-teaspoonful of Somatose dissolved in four ounces of the mixture. This was retained and continued for two or three days, when the usual food was resumed. If any part of the treatment of this child saved its life I should give the principal credit to the food.

The second case was less severe, but the result was a rapid recovery. The third case did not return after beginning the food, and I can only say that it recovered without further attention. The one thing that impressed me in both of the above cases of choleraic diarrhoea, was the rapid restoration of the digestive functions after such a profound disturbance. I have tried to avoid enthusiastic praise of the results obtained in these cases. So far as they go, they seem to show that we have in Somatose a valuable nutriment in cases of great exhaustion and in digestive failure. It deserves a more extended trial.—*The Philadelphia Medical and Surgical Reporter.*

WHERE COTTON-SEED OIL GOES.

THE disposal of the immense output of cotton-seed oil will interest those who are not familiar with this rapidly growing industry and the many uses that have been found for this most useful of all vegetable oils. The question is frequently asked, "What is cotton-seed oil used for?" Last year there were probably 1,250,000 tons of seed crushed. Out of this seed there were obtained about 1,000,000 barrels of oil. At Chicago not less than 300,000 barrels are used for making lard. At St. Louis, Kansas City, and Omaha about 200,000 barrels are used in making lard. The lard is made by mixing beef suet with cotton-seed oil, the degree of hardness of the product being determined by the relative proportions of the oil and suet. It is notable that in much of the lard there is no hog product at all.

About 20,000 barrels are used on the coast of Maine to pack sardines.

Probably 50,000 to 100,000 barrels are used by the soap makers for making toilet soaps.

Some 200,000 to 300,000 barrels go to Rotterdam, Holland, for making butter. Large quantities go to Marseilles, France; Trieste, Austria, and various points on the Mediterranean coast, especially in Italy, for mixing with olive oil.

The poorer grades are used for illuminating purposes in mines, as a lubricant in cutting threads on pipes and bolts, and other purposes.

It is not good lubricating oil, because it contains too much gum. Much money has been expended trying to find a process of refining that will eliminate the gum.

Of late years much oil has been shipped to Mexico and South America. In these Latin countries it is used as a cooking grease, without the necessity of disguising it as lard by using beef suet with it. In fact, most of the people of the earth prefer a clean vegetable oil for cooking to American fats. The Anglo-Saxons and Germans are notable exceptions.

Its use in an unadulterated condition in America as a cooking grease is rapidly increasing, especially in Texas and New England.

All the restaurants in Houston, Galveston, and other South-western cities, and in Boston, Providence, and other New England cities, keep pure refined cotton oil on hand at all times. In Boston the physicians uniformly prescribe food cooked in cotton oil as a remedy for indigestion, and the idea has grown very popular, especially in Boston and the adjacent towns and cities.—*Charlotte Observer.*

THE ULTIMATE FATE OF ARSENIOS ACID IN THE ANIMAL ORGANISM.

SEVERI (*Rif. Med.*, November 9-10th, 1893) has dealt with this question in a series of experiments, the results of which he details. His conclusions are as follows: (1) Arsenious acid administered hypodermically to the dog in such doses as to produce acute poisoning is eliminated for the most part unchanged in the urine. (2) The elimination of arsenites begins immediately after the injection, is greatest during the first few hours, and continues for three or four days at the most. (3) Even in cases in which small doses are given daily no traces of arsenites are discoverable in the urine. (4) In cases in which rather large doses are given daily for ten or twelve days the elimination of arsenites goes on for somewhat longer than stated in the second conclusion.

Three Highest Awards, Chicago, 1893.

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CONDENSED MILK.

IMPORTANT POINT AS TO WRAPPING.

THE decisions in the Queen's Bench Division on the question of labelling are of great importance to Food and Drugs Act. Inspectors. Mr. Bodkin, who appeared in defence of the conviction, contended that Justices Day and Lawrence had come to an erroneous decision in the case of *Jones v. Davis*, saying:

I would respectfully submit that this Court is not bound by that case, but that, being a Court of co-ordinate jurisdiction, and looking at the facts of the case now before it, if the present Court came to the conclusion that the learned judges in the other case had come to an erroneous decision, they would not be bound by the decision in that earlier case. The Lord Chief Justice: Is skimming alteration? Mr. Bodkin: Yes, my lord. The Lord Chief Justice: Then I do not follow the finding of the magistrates. Here, as plain as a pike-staff, is written "Skimmed Milk," and the magistrates say that the conversation with the shopman did not convey to the inspector, nor did he in fact know that the article was skimmed. If he did not choose to read it, how could the conversation alter it? Mr. Bodkin: My friend has not read the whole of the facts stated in the case. The facts were these: the inspector goes into the shop and he asks for a tin of condensed milk. There is given to him a tin, which bears a label in prominent characters, and he pays money for that tin, which he knows, as far as he can know, bears simply the description of condensed milk on a prominent part. He knows nothing whatever as to the other side of the label; he does not read the small print upon it. My contention is, in a word, this, that section 9 provided that the seller must make disclosure. The Lord Chief Justice: "This tin contains skimmed milk," is that to be disregarded? Mr. Bodkin: No, my lord, not disregarded, but, my lord, section 9 casts the duty upon the seller of making an effectual disclosure under the terms of section 9 to the person to whom he is selling a particular article. The Lord Chief Justice: Impressed by a label. Mr. Bodkin: Yes, it is expressly found as a fact in the case that supposing this prosecution were under section 6 of the statute, instead of under section 9, that label is not a distinctly printed or legibly printed label within the meaning of section 8. That is the reason that section 8 is set out in the case before your lordship. The Court of Quarter Sessions as a fact has found that. The Chief Justice: I do not know quite how to put it, but is not that going somewhat *ultra vires* even of a Court of Quarter Sessions, that a printed thing is not a printed thing? Mr. Bodkin: The 8th section says that there shall be a statement made? The Lord Chief Justice: It puts me in mind of an instance of a dilemma which was current at Oxford a great many years ago when I was there. It either rains or it does not rain; it does not rain, therefore it rains. That was logically quite correct, but to our young minds seemed rather absurd. Mr. Bodkin: The Court of Quarter Sessions found no difficulty in holding, my lord, that the label in question under the circumstances of the sale did not amount to a sufficient notice of the contents. Mr. Justice Day: Supposing it had been "This tin does not contain skimmed milk." Mr. Bodkin: I say the label itself is inconsistent, because it bears an inconsistent description of the contents. Mr. Justice Day: What are the two sides of a circle? Mr. Bodkin: I have not used that expression about the sides of a circle, I would rather not define what the sides of a circle are. I say with regard to the facts of this case there is a prominent side and a side which is not prominent, and it is the prominent side which was put before the purchaser. Mr. Justice Day: There is a side with a picture of a cow. Mr. Bodkin: It is called a calf; it is called the "Calf Brand," and that picture purports to represent a calf. It was pointed out in the previous case that the calf could have nothing to do with the contents of the tins. The Lord Chief Justice: These red letters are two barley-corns long—will not that be sufficient—two-eighths of an inch long? Mr. Bodkin: Your lordship will see under section 6 there are certain offences stated, to which section 8 provided a defence. The Lord Chief Justice: Really let us get to what the Master of the Rolls objects to as an expression which I have known from a boy—common-sense. A man is not to be convicted if he puts on an article he sells a label describing it truly. This gentleman did put upon the tin, "This tin contains skimmed milk." What more could he do? Mr. Justice Day: One of the recommendations for it is, "Thereby proving its superiority over other skimmed milk." Mr. Bodkin: I do not want to take up the time of the Court. I only want to put this matter before it. Under section 6 certain offences are stated. The Lord Chief Justice: Under something which we have

nothing to do with, something else is shown. Mr. Bodkin: I am only answering your lordship's observations. Under section 8 it is a defence if you put a label legibly printed attached to the article sold. Under section 9, which is a totally different part of the statute, there is not that defence provided, but there is a duty cast upon the seller of making disclosure of the alteration. The Lord Chief Justice: Is not section 8 applicable? Mr. Bodkin: No, with great submission section 8 is not applicable to the present case, because section 8 is the complement to section 6, and is the defence to the special offences committed under section 6. Your lordship sees section 8 shall be a defence. The Lord Chief Justice: Was not this gentleman convicted in respect of the sale of an article of food which was mixed with matter not injurious to the health and not intended to enhance its bulk and weight? Mr. Bodkin: No, he was convicted under section 9 of selling, without disclosing its altered character, milk from which 80 per cent. of cream had been taken. The Lord Chief Justice: He could do no more than print upon it "This is skimmed milk." Mr. Bodkin: Might I ask your lordship to look at section 8? It says that a person shall not be guilty of any such offence as aforesaid—that is, the offence under section 6—if he puts a label attached to the article sold. Under section 9 that defence is not open to him. The Lord Chief Justice: Why? Mr. Bodkin: Unless it could come within the words "making disclosure," and my point is that the disclosure under section 9 is a disclosure of the altered character so as to give the purchaser an opportunity of rejecting the purchase or not after he knows what the contents are. The Lord Chief Justice: Supposing instead of two barley-corns he had printed it in red letters an inch long. Mr. Bodkin: That would be for the Court to say whether there was a disclosure. The Lord Chief Justice: Is the Court below entitled to say "Yes, there is this printed as plain as it can be, but it does not disclose?" Mr. Bodkin: The Court below has not said that in this case. The Lord Chief Justice: It has sent up as part of the case this round thing. Mr. Bodkin: It is found as a fact that he did not know he was purchasing an article in an altered state. The Lord Chief Justice: Is a man to be convicted because an inspector cannot read or does not read? Mr. Bodkin: The point was, I submit, whether the appellant here did his duty in making disclosure to the purchaser of the altered character of the article he was selling. The Lord Chief Justice: What could he do more than say that it was skimmed? Mr. Bodkin: No, he did not say so. The Lord Chief Justice: Supposing he held up the thing so, and pointed to this line, would that do? Mr. Bodkin: I should think that that was making a disclosure. The Lord Chief Justice: Will not handing it over without pointing to it make it a disclosure? Mr. Bodkin: I submit not, not under the particular circumstances of this case, because the inspector has sworn that he never saw the other part of the label. The Lord Chief Justice: I cannot agree at all. Mr. Bodkin: The case of *Jones v. Davis* was not decided at the time this appeal was decided at the Quarter Sessions, and if your lordships think there is no distinction between the two cases, I do not wish to take up your lordships' time. The Lord Chief Justice: I do not see any distinction. Mr. Bodkin: Perhaps my friend would allow me to say, as regards the other case of *Wright v. Tyler*, the second of the two, in that case there is this distinctive fact, that after the inspector or his assistant had asked for the tin of condensed milk, a tin was taken from a large heap of tins lying at the back of the counter, and was wrapped up in paper, and was put in that wrapped-up condition across the counter to the assistant, who swore before the Quarter Sessions, and it was found that he never saw the label at all. The Lord Chief Justice: Is it suggested that that was done fraudulently? Mr. Grain: No, there is an express finding of the Quarter Sessions of no fraud in either case. The Lord Chief Justice: May not a shopkeeper wrap up an article? Mr. Bodkin: Not if it is sold in an altered state. The Lord Chief Justice: The label said that the article itself was sold in an altered state. Mr. Bodkin: That would not be making a disclosure to the particular purchaser who was purchasing. The Lord Chief Justice:

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A purchaser may take the cover off, may he not? Mr. Bodkin: Does the duty lie on a purchaser to unwrap every article? The Lord Chief Justice: The provisions of this Act are, very rightly, very stringent, because it is for the interest of the public that these drugs and milk, and so on, should be sold pure; therefore it is quite right to be strict. When a man sells a thing which discloses on the face of it when the wrapper is round it what the nature of the article inside is, and the inspector can find that out, I cannot see the difficulty. Mr. Bodkin: Each case I submit must be viewed on its own merits, and here the Court see the question of fact is assigned as found, that there was in fact no knowledge conveyed by the sellers to the purchaser of the contents in either of the two cases. The Lord Chief Justice: There was means of knowledge. The Inspector must not wrap himself up (I will not say in his own virtue) but in his own ignorance say "I cannot read." Mr. Bodkin: If there was any suggestion that he wilfully shut his eyes to the label, that would be a matter the Court of Quarter Sessions would consider, but they found as a fact that he had no knowledge of the contents until the purchaser was told, and he had it divided into three parts. I submit that is a question of fact which has been decided, and upon that question of fact the case of *Jones v. Davis* is distinctly contrary to the present cases. If that is not your Lordships' view of the case, I only wish to put these considerations before the Court. The Lord Chief Justice: I think this is quite a plain case—both of them are quite plain cases. In both cases the decision must be reversed and the conviction quashed. Mr. Grain: Will your Lordship allow me to mention the question as to costs? There is some difficulty as to this matter. I am quite aware of the difficulty. The Lord Chief Justice: There is a rule that there shall be no costs. Mr. Grain: I am afraid there is no power to ask for costs against Quarter Sessions; but is there not a power for you to order the costs in our favour which were ordered against us before the justices? I quite agree it is a great difficulty. The learned Master says that is so. The Lord Chief Justice: No.

OUR BUTTER SUPPLY.

MR. HUDSON, the great butter merchant, has been interviewed by a representative of the *Cable*. He says he cannot sell English butter; his customers will not buy it. When asked why, he replied that there had always been difficulties with it. Enough attention was not paid to cleanliness, uniformity, and weight. If more care were taken in these respects by the English maker French butter would be an unknown quantity. "In old days," Mr. Hudson said, "the demand for the best fresh English butter was always greater than the supply, but what our customers used to object to was the want of uniformity. One week the butter on their table looked white, another week it looked yellow, and another week it would have a different flavour. This was due to the fact that we were obliged to be supplied by individual farmers, whose butter naturally varied according to the time of year, whether their cows were out on grass or being fed indoors, and so on. Then, again, as to weight, the foreigner is never unjust in his weight, but we generally found the English producer was two ounces or so short. The foreigner's great aim is to turn out butter of the same colour, appearance, and texture. For instance, he mixes all his different kinds of best butter together. By best butter I mean all that is clean and good in quality. Some of it may be of one colour and some another, but after it has passed through the machine it comes out all one uniform colour, and if from any reason one week's supply happens to be rather fainter than usual he adds a little colouring matter, such as annotta. Then he adds a little preservative. He deals in precisely the same way with the different kinds of second-class butter, third class and fourth class. This is the system that must be adopted in England if the farmer is ever to take the place of the foreigner in the home markets. You see the plan that the foreigner pursues enables us to supply our customers with exactly the same butter from the 1st January to the 31st December, and that is what they like it." As a remedy, Mr. Hudson suggests the formation of creameries, such as exist in Denmark and are becoming common in Ireland. The cause of the introduction of butter from Normandy into England was the Franco-German war. Before the war the butter was sent to Paris, and when that capital was besieged the merchants sent it to England to try and dispose of their stock. How successful they were is seen by the large demand for their produce. Mr. Hudson does not see any reason why England should not produce all the butter necessary for their consumption and at a cheaper price. "But you know what the English agriculturists are, they cannot be persuaded, or at least they have not been persuaded up to the present, to look at these questions from a practical business point of view. However, he added cheerfully, directly they like to adopt the foreign system of butter producing I am ready to place their goods on the market, and there is no doubt that it will pay them very well to do so."

MR. H. SELL, 167, Fleet-street, E.C., has sent us a copy of "Sell's Directory of Registered Telegraphic Addresses," as compiled from the official list. This book contains the telegraphic addresses of upwards of 40,000 firms, also a list of large commercial houses, importers, exporters, merchants, and manufacturers, and is a gazetteer of the leading towns in the kingdom. It will be of great use to all business men.

COCOA AS IT SHOULD BE MADE.

IN the dismal waste of the Blue Book on the Employment of Women, recently issued by the Labour Commission, there is at least one oasis of brightness which gladdens the heart of the lover of his kind. Messrs. Cadbury, the well-known cocoa manufacturers, not only pay their employes a real "living wage," but make thoughtful provisions for their comfort, amusement, and general well-being, which recall the good old times when the head of a business was like the father of a family. Miss Clara E. Collet, in a report on Birmingham, says the firm has the reputation of paying the best average wages in the district, which is explained as meaning that the average wage of the majority of the girls in its employ is higher than that of the majority of girls in any other factory. The whole of the manufacture of the cocoa and chocolate is carried out under circumstances calculated to keep out all impurities from dust and dirt. Bournville, where the cocoa works are situated, has been called the "Worcestershire Eden," on account of the beauty of its surroundings, and, as may be gathered from the report, the factory is in keeping with the lovely spot in which it is situated. The picture which the Lady Commissioner draws of this ideal factory rescues the reader of the Blue Book from the feeling of disgust and despair excited by the reports as to the condition of workers under less humane and enlightened employers. It will be a comfort to the many who enjoy their cup of pure, fragrant, and nutritious cocoa to learn, on such excellent authority as that of a Parliamentary Blue Book, that they can do so with a safe conscience, without being haunted by the thought that the delicious beverage, which gives them strength for their day's work, has in it any taint of human suffering.

AN ANALYST'S LOCUS-STANDI.

IMPORTANT CASE AT WIGAN.

AT Wigan on February 12th, Mr. Morris was charged with selling adulterated brandy to the prejudice of John Sumner, the inspector under the Food and Drugs Act. Inspector Sumner was about to put in the certificate of the analysis, when Mr. Lees objected to its sufficiency. The Town Clerk said he would read the certificate, and Mr. Lees's objection could be heard later on. Mr. Orsman certified that the liquor was a mixture of brandy and water, and was 42 degrees under proof, being 17 degrees below the standard. On Mr. W. J. Orsman, borough analyst, being called by the Town Clerk, Mr. Lees required that this witness's appointment by the Wigan Corporation should be proved in the regular manner. The Town Clerk asked for an adjournment for ten minutes in order to produce the necessary documents, and this was granted. The hearing of the case being resumed, the Town Clerk, who was sworn as a witness, produced the minutes of the special meeting of the Council at which Mr. Orsman was appointed borough analyst, and also the document showing the approval of the Local Government Board. Mr. Lees drew attention to the fact that the minutes produced by the Town Clerk were printed, and said he should require the production of the original minute taken by the Town Clerk at the meeting. The Town Clerk said the minutes he had put in were the official minutes of the Council meeting and were signed by the Mayor. Mr. Lees: When were these minutes signed? The Town Clerk: I will not charge my memory with anything beyond the fact that these are minutes signed by the Mayor. Mr. Lees said it would be necessary for the Town Clerk to produce Mr. Orsman's sealed appointment by the Corporation. The Town Clerk differed from Mr. Lees, and said such a proceeding was not necessary in order to prove an appointment. Mr. Lees: Well, that is a question of law. The Town Clerk: Yes, and one that I prepared to argue with you. He was about to call Mr. Orsman, when Mr. Lees again interposed. He said that the Corporation could only act under special powers in electing their officers, and unless they did everything in proper legal order, the appointment was void. The Corporation could only act under its seal, and he must insist that the sealed appointment of Mr. Orsman be produced. Then again, the minute that had been produced was simply a copy of the original draft taken by the Town Clerk, and he pressed for the production of the original, there being a special provision under the Municipal Corporations Act as to the way in which minutes must be taken and confirmed. He contended that the Town Clerk had failed in proving the legal appointment of Mr. Orsman. If that gentleman had been appointed at one of the quarterly meetings of the Council it would have been a different matter, because at such a meeting the Council had a right to go into any matter without notice having been given, but at a monthly or special meeting they were strictly confined to the objects for which the meeting had been called. The meeting in question being a special one, he should require evidence to prove that the meeting was properly convened, that the proper notices were posted, and copies of them served on each member of the Council. The Town Clerk again differed from Mr. Lees, whose objection he characterised as a most interesting disquisition but not good law. Mr. Lees was absolutely wrong about the law with regard to quarterly meetings, and there was no necessity whatever for the seal of the Corporation to be affixed to an appointment in order to make it legal. It had been decided that the only object of a seal was to protect the official with regard to his salary. Mr. Ellis (the magistrates' clerk) said it appeared from the Act that the appointment of such officials as Mr. Orsman seemed to be complete by election, and no document in writing was necessary. That would appear to dispense with the necessity of a sealed document. With regard to the minutes, he should advise the bench that the minutes put in by the Town Clerk were the official and actual minutes of the Corporation, as they were duly signed by the mayor. He did not consider that the bench need go into the question as to whether the special meeting was properly convened or not. Mr. Orsman then entered the box, and proceeded to state the result of the analysis which he made of the sample of brandy produced. Mr. Lees again objected. Mr. Orsman was precluded by law from saying anything beyond what he had actually stated in his certificate. He must not add anything. Mr. Ellis advised the magistrates there was nothing in the Food and Drugs Act to preclude Mr. Orsman from amplifying what he stated in his certificate of analysis. Mr. Orsman stated that the sample was a very weak sample of brandy and water, the strength being 12 degrees under proof, and 17 degrees below the standard. After further evidence the magistrates retired for a few minutes to consider their decision, and on returning into court Mr. Rookcroft announced that the bench considered there was not the slightest doubt that the brandy had been adulterated, and the defendant would be fined two guineas and costs.

MR. A. C. WILSON, F.C.S., of Stockton, has been appointed by the Durham County Council an analyst under the Feeding Stuffs and Fertilisers Act.

IS CO-OPERATION A SHAMP

A CORRESPONDENCE in the *Edinboro' Evening Dispatch* is doing a great deal to strip the mask off the network of meanness that exists as co-operation. One co-operator writes:—

Edinburgh, February 21st, 1894.

SIR,—It is the co-operators in conference who are shams. I am a young co-operator, but save me from my sham benefactors! I was appointed to attend this conference of the east shams by my society at their quarterly meeting. A paper was read by a Mr. Gerrard, of Maryhill, on the credit system, dividend manufacture, and overlapping, all of which he treated as gross abuses, and urged that some plan must be adopted to correct the evils connected with them. The paper was discussed, with all its pros and cons, in speeches of five minutes' limit, for about an hour and a-half without any seeming practical outcome, when it was proposed and seconded that the Co-operative Union be empowered to compel the various co-operative societies to put down the evils complained of. Then a hubbub arose among the place-hunters and spouters that if this was done they saw that they would be found out, and the remuneration that they get for officers and committee men would vanish when the public came to see through their methods and ways. This being my first conference, it will be my last, as they seem only to exist for the benefit of a few who receive fees as chairmen, treasurers, secretaries, and delegates to other conferences and conventions, etc.; and it is only by keeping themselves prominently forward that they will get the appointments for practically doing nothing. What is the use of reading papers, etc., if they are not to be acted on—only discussed, and then the reader thanked, and his suggestions approved of. Only wait and the breeze will blow by, and things will go on as before: great dividends, sweating, credit, overlapping, etc., and the sham spouting, with the great Mr. Taylor at their head, supported by the motley crew of tea-drinkers and office-seekers!—I am, etc.

AN INDIGNANT AND DISGUSTED CO-OP.

DETECTING HEATED COTTON-OIL IN LARD.

PLACE about ten grains of the sample to be examined in a porcelain capsule of about half an ounce capacity. A small disk of white filter paper (which has been soaked in hydrochloric acid, thoroughly washed with distilled water, and dried) is just moistened with a 12 per cent. solution of nitrate of silver and placed in the concave part of a watch-glass, which, with the paper downward, is then inverted over the capsule containing the sample. The capsule is then put in a shallow oil bath, to which heat is gently applied until 240deg. F. is reached. The source of heat is then immediately withdrawn. If even less than 1 per cent. of heated cotton oil be present in the sample, a very marked coloration takes place on the disk, varying from a light brown to nearly black. If the sample under examination be pure and fresh, the disk is apparently unaffected.

WHERE TO DINE IN LONDON.

How many of those who are compelled to dine from home in London pay far too highly for ill-cooked and carelessly served viands, but still feel, as Shakespeare says, like one "who rises from a feast with that keen appetite that he sits done." He need no longer do so, for under the proprietorship of Messrs. Carmine and Navello, the old and celebrated Craufurd's Hotel, in Sackville-street, Piccadilly, has been converted into a high-class hotel and restaurant which for elegance, good service, and economy will vie with any of the most highly reputed in France or Italy. Upon entering the place one can easily imagine that he has just turned out of the Boulevard des Capucines or Rue Castiglione at Paris, or the Via del Corso in Rome. Should he prefer the table d'hôte style he can accommodate his taste in the really beautiful dining-saloon which is capable of comfortably seating 200 guests, or should he be of a less sociable disposition he can take up his position in one of the many private dining saloons according as he may desire an apartment to accommodate a large or a small party. Indeed, he might require a private dining saloon to discuss business with a friend during the repast or merely to enjoy with that friend "one feast, one house, one mutual happiness" and feeling, again using Shakespeare's words, "though the camelon, Love, can feed on air, I am one that am nourished by my victuals." Judging from the impressions formed at the inaugural banquet, Messrs. Carmine and Navello, the new proprietors, will speedily make the Craufurds' one of the most frequented dining-places in the metropolis.

THE READY STERILISATION OF MILK.

THE dangers connected with the use of tuberculous and other forms of diseased milk being now generally recognised, it is desirable that all milk intended for food should be sterilised. The chief of the bureau of animal industry at Washington has drawn up a series of simple instructions for the sterilisation of milk, which may be usefully employed in private families. The bottle or other vessels containing the fresh milk is placed inside any convenient metal vessel, water being poured into the latter till it reaches the level of the milk. The bottle holding the milk has its mouth plugged with absorbent cotton, or, in its absence, any other kind of clean cotton. It is necessary that the milk vessel be raised about half an inch from the bottom of the outer vessel, for which purpose a perforated tin pie-plate or other convenient means may be adopted; a free circulation of water around the milk-bottle is thereby rendered possible. When all is ready the apparatus is heated on a fire or stove till a temperature of 155deg. Fahrenheit is reached, when the vessel is taken from the fire and kept tightly covered for half an hour. The bottle or bottles of milk are then taken out and put in a cool place. The milk may be used at any time within twenty-four hours. It is stated that a temperature of 150deg. maintained for half an hour is sufficient to destroy any germs likely to be present in milk, and it is found in practice that raising the temperature to 155 deg. and then allowing the milk to stand in the heated water for half an hour insures the proper temperature for the required time. The temperature of the water should not be allowed exceed 155 deg., otherwise the taste and quality of the milk are likely to be adversely affected. An ordinary dairy thermometer may be used, and the temperature tested from time to time by lifting the lid of the outer vessel.

APPOINTMENTS VACANT.

INSPECTOR OF WEIGHTS AND MEASURES (Wakefield), March 2nd.—The County Council of the West Riding of Yorkshire require an Inspector of Weights and Measures; salary £150 a year, exclusive of travelling expenses. Applicants must state age, past experience, whether certified by Board of Trade, and furnish not exceeding five original testimonials. Applications to be sent in by March 2nd. For further particulars apply to Mr. W. Vibart Dixon, Office of Clerk of Peace and County Council, Wakefield.

SUB-INSPECTOR OF NUISANCES (Bradford), March 10th.—The Sanitary Committee of the Bradford Corporation require the services of two competent persons to act as Sub-Inspectors of Nuisances. Age not to exceed 40 years. Salary £85 per annum each and uniform. Applications, stating age and previous occupation, to be delivered at the office of Mr. W. T. McGowan, town clerk, Town Hall, Bradford, by March 10th. Any information may be obtained at the Town Clerk's Office.

SURVEYOR AND SANITARY INSPECTOR, March 10th.—For the burgh of Buckie. Salary, £80 per annum.—Mr. John L. M'Naughton, clerk to the commissioners, Buckie, N.B.

TOWN FOREMAN (Weston-super-Mare), March 5th.—The Weston-super-Mare Improvement Commissioners require the services of a competent man to act as Town Foreman under the directions of their Surveyor. The candidate must have had experience in the control and management of men, the construction of roads, sewers, laying of water mains, and such other works as are usually carried out by a Local Board. The salary will be £2 per week, with a small cottage, coal, and gas. Applications, to be sent to Mr. Hugh Nettleton, town surveyor, Town Hall, Weston-super-Mare.

NOTICE TO READERS.

Back numbers of the Journal are now very scarce, and can only be supplied in future at 3d. per copy when over a month old. Vols. 1 and 2, including index, 20s. each. Vol. 3, 10s., with index. Index separate, 1s. each.

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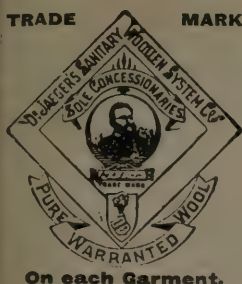
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DISINFECTANTS AND ANTISEPTICS:

HOW TO USE THEM.

By E. T. WILSON, M.B.Oxon., F.R.C.P. Lond.

London: H. K. LEWIS, 136, GOWER STREET.

Food and Sanitation.

SATURDAY, MARCH 10TH, 1894.

THE HERMITE PROCESS.

IS WORTHING BEING HUMBUGGED?

IN these days when rapid strides are frequently made in the science of applied electricity, it behoves us to be careful not to become too credulous; we must not fall into the habit of believing that almost anything can be done, and done economically, by making use of that particular mode of motion.

There is something inexpressibly fascinating in the electrical science; there is consequently amongst the people a wide-spread tendency to accept without a very minute investigation any statement which has behind it an appearance of possibility, and being ready to believe almost anything possible to electrical energy, there are many who are almost convinced beforehand, or at least are ready to receive very favourably, any evidence which may be set before them.

We ourselves underwent a disappointment some time ago, when we investigated the Webster electrical process for the purification of sewage. We were then, as now, charmed with the brilliant halo which surrounds the whole question of electro-chemical reactions; but on approaching the matter closely we were soon roughly pulled back into the realms of common-sense, the inextricable intricacies and philosophical delicacies of the process were altogether overwhelming. We have recently visited Worthing, where we had the good fortune of finding M. Hermite's electrolytic apparatus in action, and the whole process of sewage purification by treatment with chlorinated sea-water being demonstrated.

The plant consisted of a steam-engine lent by the Corporation of Worthing, from which the initial energy was obtained: the engine drove a dynamo, and the

current obtained was conveyed to two large tanks, holding, perhaps, some hundreds of gallons of sea-water. In these tanks the sea-water underwent electrolytic decomposition, with the result that the water in the end became surcharged with oxides of chlorine, well known to be amongst the most powerful disinfectants, deodorants, and antiseptics known to science.

In a yard sunk in the earth to a sufficiently low level was a receptacle like a large zinc bucket, inside which was another vessel perforated with holes. Into the inner vessel passed at intervals the sewage from two extemporised water-closets, and here also flows the electrolysed solution. No sewage was flowing into this vessel at the time we saw it, as the closets were not being used. The buckets contained a large accumulation of paper and other detritus, said to be the accumulation of a week.

The inner vessel was connected by an inverted syphon, with a second receptacle, which was full of the treated sewage, and which, therefore, contained a fluid truly representing what would in practice flow into the sewers.

From this second vessel we were permitted to take a sample for analysis, but were not permitted to have the contents of the vessel stirred up before the sample was drawn; the sample, therefore, was not fairly representative of the whole matter present, consequently it has not been submitted to analysis.

We then passed on to another set of apparatus, that is, another receptacle with its syphon arrangement, like the one already spoken of, but in this case the sewage of 14 cottages, together with sink or scullery refuse and roof water, was received and treated.

Here the ex-mayor of Worthing, a gentleman whom we were informed takes, and has taken, a deep interest in removing from the town all fear of a recurrence of typhoid, and as quickly as possible reinstating it, in the opinion of the public, as a health and pleasure resort, was good enough to order the contents of the sewer end of the syphon to be stirred up, and courteously permitted us to draw a fair sample.

The results of a partial analysis of this treated sewage were as follows :—

	Grains. per gallon.
Solids in suspension dried at 105° C.	186.2
Loss on ignition (largely organic matter)	75.6
Inorganic matter (composed largely of magnesia)	110.6

A superficial examination of the sample of supernatant treated sewage from the vessel connected with the two water-closets, showed that it was still strongly impregnated with an excess of free oxygenised chlorine compounds to such an extent as to give to any person sniffing at the bottle the well-known sharp and pungent sensation peculiar to them.

To solemnly submit such an effluent to an eminent bacteriologist for the determination as to whether or not sterility had been obtained, constitutes in our opinion an absurd farce. There may as well be sent a bottle of oil of vitriol to the same person for the same purpose. No wonder this examination can be done without fee; a sniff at the bottle is quite sufficient for any qualified person to know that the existence of life in any form in such a highly-charged fluid is absolutely impossible.

If the town of Worthing can afford to treat its sewage in this drastic fashion, there cannot be a doubt that so far as the fluid portion is concerned it cannot propagate typhoid or any other form of the zymotic diseases.

Nobody can possibly tell how much energy per 100 gallons of sewage is being used, the appliances are so gigantic as compared to the amount of work done. There is a steam hammer in use to smash an egg, and to calculate how much power has been used in the smashing and how much is in excess and has gone to waste with such an arrangement as is now in operation at Worthing, is a hopeless task.

Of course, it is freely stated that far too much power is at the demonstrators' disposal. If it be so, why not separate and draw off just as much as will do the work required? Why not have small sea-water tanks, which shall hold enough or not too much? An open course and a free field should be allowed for this, as for all other scientific methods for the treatment and purification of sewage, and we have no doubt but that our trans-Channel friends will get these. They must at the same time be prepared to accept very close criticism, the more especially as unfavourable rumours from Havre have already reached these shores.

THE EXHAUSTED GINGER TRADE.

At the Aberystwyth Petty Sessions, on February 28th, R. H. Williams, local manager for the Star Tea Co., was summoned for selling ground ginger which contained 20 per cent. of exhausted ginger. Mr. John Evans, solicitor, of Aberystwyth, appeared for the prosecutor (Mr. Howell Evans, Chief Constable for Cardiganshire), and Mr. Alun Lloyd, solicitor, of Ruthin, represented the defendant.

Mr. John Evans, in his opening speech, described the practice of abstracting valuable flavouring materials from ginger, or of their mixing the residue with genuine ginger, and stated that this form of fraud had been but recently discovered. He added that, subsequent to the sale, it had been brought to the notice of the prosecution that the head manager of the Star Tea Co., Mr. Winterbotham, of Rhyl, did possess a guarantee from the wholesale house of Drysdale, Denison, and Co., that the ginger was genuine; but this did not protect the local vendor, the defendant, who himself had no warranty. It was evidently important that the actual seller should possess the warranty. It was decided in the case of *Hotchin v. Hindmarsh* (65 L.T. 149), that the person who does the physical act of selling is guilty of the offence, and that section 25, which provides for protection by warranty, "deals only with a limited class, viz., those in which the defendant is the person who has purchased." Otherwise it would be possible for a manager to sophisticate for his own private profit, and yet shelter himself under a warranty which had, in all good faith, been given with the food as brought originally by another.

The Chief Constable deposed that he purchased the sample and divided the same, according to usage, into three parts. It was not until after the summons had been issued that Mr. Winterbotham, of Rhyl, showed him the invoice, across which the words "guaranteed genuine" were written.

Professor Lloyd Snape, D.Sc., Ph.D., F.I.C., Public Analyst for Cardiganshire, confirmed his certificate, which ran as follows:—"I am of opinion that the sample had been adulterated with exhausted ginger, and contained the parts as under:—Total ash 3.06 per cent., total ash less silica 2.774 per cent., and of ash soluble in water 1.31 per cent. As various samples of genuine ginger differ considerably in chemical composition, the precise amount of the adulteration cannot be ascertained. But on the hypothesis that the genuine ginger present was of such a quality as to yield the minimum percentage of soluble ash, at least 20 per cent. of exhausted ginger must have been added." In the course of examination, Dr. Snape said that the percentage of exhausted ginger was probably greater, but was certainly not less than that stated in his certificate.

Mr. Lloyd, for the defence, submitted (1) that the firm who held a written warranty ought to have been prosecuted instead of the defendant, and (2) that the prosecution, if in any case justified, should have been instituted under section 9, and not under section 6 of the Food and Drugs Act. Mr. J. Evans, in reply to the latter contention, maintained that section 6 was that which applied to the case, as the spent ginger had been added to genuine ginger, and that the article supplied was not what the purchaser might reasonably expect to receive. Should, however, the magistrates think differently, he asked them, should they find an offence proved, to convict under whichever section they thought proper, Mr. Evans showing, by reference to the case of *Hiett v. Ward* (L.T. New, Feb., 24-94), that it had been ruled that, under section 1 of the Summary Jurisdiction Act of 1848, the magistrates had the power to convict for a different offence to the one charged in the summons. Alderman Peter Jones, the presiding magistrate, thought that the section should at once be specified; and Mr. Evans then asked the Bench to permit section 9 to be substituted for section 6. This the magistrates agreed to do. Mr. Lloyd having objected to the magistrates exercising this power, the clerk (Mr. Hugh Hughes) stated that, though the Bench was justified in taking this step, yet, if the defendant was taken by surprise, it would be good ground for adjournment. Mr. Lloyd elected, however, to proceed with the case, but asked the Court to make a note of his objection.

Mr. A. J. de Hailes, F.I.C., of London and Public Analyst for Luton, was then called for the defence. He stated that he had examined the different commercial varieties of genuine ginger, and was of opinion that the sample sold by the defendant excelled, in flavouring properties, some of the best and most highly priced in the market. In the course of cross-examination by Mr. Evans, Mr. Hailes stated that his view was based upon the percentages

of volatile oil, ethereal extract, and alcoholic extract, and which he had found to be respectively 1.2, 4.7, and 3.06. He said that he had never heard of ginger being exhausted otherwise than by spirit. He did not know whether ginger would be diminished in value by treatment with water alone, but on being pressed admitted that no doubt some of the properties of ginger would be extracted by water. He had determined the percentage of ash soluble in water, obtaining a result not materially differing from that cited in Dr. Snape's certificate. He had not actually found in any sample of ginger which he had known to be genuine less than 1.85 per cent., nor in an exhausted ginger less than 0.4 per cent. of soluble ash. He could not account for the low percentage found in the sample supplied by the defendant, and admitted that, on the hypothesis that the above-mentioned percentages were the actual minimal values, the former sample must have contained about 25 per cent. of spent ginger. Mr. Winterbotham having given evidence as to the warranty, and the solicitors for the defence and prosecution having addressed the court on some legal points, the magistrates, after consultation, stated that they were of opinion that the offence was committed, and fined the defendant 5s. and costs. They considered, however, that the defendant and the Star Tea Co. were not cognisant that the ginger had been adulterated, and hence they had imposed only a small fine.

THE SALE OF CARBOLIC ACID.

ATTEMPTING TO HOCUS THE PRIVY COUNCIL.

IN the House of Commons on February 26th, Sir W. Foster, in reply to Mr. Picton, said the imposition of restrictions on the sale of carbolic acid was a matter for the Privy Council. The Local Government Board had been in communication on the subject, and he believed the matter was still under consideration. He had communicated with the Registrar-General as to the number of deaths from carbolic acid poisoning from December 3rd to the 17th ult. There was no information as to the country generally, but in London during the period referred to, out of a total of twenty-eight deaths from accidental poisoning one was due to carbolic acid, and out of ninety-eight cases of suicide seven were due to that poison.

We shall be curious to see by what process of reasoning those engaged in hoccussing the Privy Council will make out that carbolic is any less poisonous when sold by a chemist than when vended by a grocer. For a piece of impudent lying, and a cheeky endeavour to exploit the grocer, this action of chemists "on the make" would be hard to beat. We should not be surprised if the gentlemen of indurated cuticle who have put up this latest pharmaceutical job have not the effrontery to allege that the one case of accidental poisoning and the seven suicides were due to the fact that the carbolic was not sold exclusively by chemists. But will anyone have the sense to ask how many of the poisonings were from carbolic sold by chemists, and how many were from carbolic sold by grocers?

ALLEGED ADULTERATIONS.

NOTTINGHAM GROCERS.

AT the Nottingham Summons Court on February 23rd, Francis Edward Young, provision dealer, of 37, Fishergate, was summoned for that he on January 19th did unlawfully sell to Charles Copley, inspector of nuisances, a certain article of food, to wit, butter, which was not of the nature and substance demanded by the purchaser. Mr. F. B. Harris (from the office of the Town Clerk) appeared to prosecute, and Mr. H. B. Clayton defended. Mr. Clayton said that he had a preliminary objection to raise to the summons on the ground that it was too general, and it ought to set out in what way the butter was to the prejudice of the purchaser. In support of this argument he quoted section 10 of the Food and Drugs (Amendment) Act of 1879, which provided that particulars of the alleged adulteration should be given. He also cited the case of *Barnes v. Ryder*, reported in 56 J.P., which was a decision of the judges on this section, the judges holding that particulars must be stated in the body of the summons in order that the defendant might know the specific charges against him. It was also laid down in *Stone's Manual* that the summons should contain those particulars. Mr. Harris admitted

that the case of *Barnes v. Ryder* was somewhat against him, but it had never been customary to give those particulars in Nottingham. The Chairman said that unless Mr. Harris could show something which would refute the decision in *Barnes v. Ryder*, the magistrates were of opinion that section 10 was binding upon them, and they accordingly dismissed the summonses.—Two other summonses dependent upon this decision were withdrawn by Mr. Harris.

THE MARGARINE ACT IN BELFAST.

AT Belfast on February 27th, a provision merchant named John Orr, 51, York-street, and his assistant, Robert McCartney, were summoned by Mr. David McMaster, inspector of food and drugs, for having exposed for sale a quantity of margarine which was not legally labelled as such. The inspector stated that on January 31st he went into Mr. John Orr's house and found on a bench a number of lumps of what appeared to be butter. Witness asked the shopman to allow him to taste "some of that butter," pointing at the same time to the lumps he desired him to take it from. He then selected one of the four pieces, and requested him for "a pound and a-half of butter from that lump." McCartney placed the butter knife on another lump lying contiguous, and seemed as if he was going to take the pound and a-half from it. Witness thereupon told him he wanted it from the one he had pointed out, and after some hesitation on the part of the shopman he got what he wanted, and laid down on the bench as payment half-a-crown. McCartney, in giving him the material, said it was a mixture and not pure butter, and he charged him at the rate of 10d. a lb. for it. The inspector then explained that he was an inspector, and had bought the goods for the purposes of analysis. "Yes," said the shopman, "I just thought, you were an inspector, and remember that I said it was a mixture." Witness said he would remember the observation, and proceeded to divide the article into three parts, sealing and labelling each, giving one portion to McCartney, retaining a second himself, and forwarding a third to Professor Hodges. Both defendants appeared in person, and Mr. Orr admitted that the margarine which was kept separate from the ordinary butter and Danish butter that he also sold, had not been legally labelled, but he stated that he had not a label just then, and that it was covered with a cloth. Mr. Hodder, R.M., in fixing Orr 40s. and costs, remarked that this case was much less serious than that of any of the margarine prosecutions which had been disposed of during last week and the previous weeks. The case against McCartney, the shopman, was not proceeded with.

MORE VINEGAR PROSECUTIONS.

MARY ELIZABETH TAYLOR, of Steyning, was summoned for selling adulterated malt vinegar, at Steyning, on January 15th. Mr. Ernest Beard, barrister (instructed by Mr. W. A. E. Headley, of London), appeared for the defendant, and pleaded not guilty. A preliminary objection to the wording of the summons raised by Mr. Beard, having been over-ruled, P.S. Read, inspector under the Food and Drugs Act, said on January 15th last he visited the defendant's shop at Steyning. He asked for a pint of malt vinegar, which was served by defendant herself. He paid her threepence for it. He then told her that he had purchased it for the purpose of being analysed. The sample was divided at the request of the defendant. Superintendent Byrne proved the receipt of the samples from the last witness, and stated that one was sent to the public analyst by registered post. He subsequently received the certificate (produced) from the analyst, which stated that the sample was that of adulterated vinegar, and contained 20 parts of malt vinegar and 80 parts of vinegar not made from malt. This closed the case for the prosecution, and counsel, addressing the Bench, remarked that it was very unsatisfactory that what was really malt vinegar had never been decided. He cited several cases where analysts had disagreed as to what was malt vinegar, and, this being so, the Bench should dismiss the summons. There was no legal definition of malt vinegar, and the matter had never been taken to the High Court. It was a serious thing for tradespeople to be summoned, and under the circumstances he submitted it would not be safe to convict. He asked the Bench to say that this vinegar was the vinegar of commerce, as it was called. People would not like vinegar made from malt alone; they would not be able to take it. Mr. Breach: Is there such a thing as pure malt vinegar?—Counsel: It's never sold. You could not take it with cucumber or anything like that.—Colonel Andrewes asked what wholesale dealers called vinegar, and what was put on the labels.—Counsel replied that they never sold pure malt vinegar; and the wholesale people had given up using the word "malt."—After a short consultation the Bench fined the defendant 15s. and 13s. costs.

ANOTHER VINEGAR CASE.

ERNEST GEORGE FLOATE, of Washington, was summoned for selling adulterated malt vinegar at Washington on the same day.—Defendant was unrepresented.—P.S. Read said he called at defendant's general shop, and was served with a pint of malt vinegar. The sample was divided at the request of the defendant.—Superintendent Byrne produced the certificate received from the public analyst stating that the sample sent him was adulterated with 30 per cent. of added water.—Defendant handed in to the Bench a copy of a letter he wrote to the firm from whom he received the vinegar and their reply, the contents of which were not disclosed.—The Chairman said he noticed that there was nothing stating that the vinegar was guaranteed to the retailer, and the whole sale people said the vinegar was very good for the price charged.—Defendant said he was under the impression that he was selling a good article.—The Chairman pointed out that defendant should have had a written warranty with the article when he purchased it.—A fine of 15s. and 13s. costs was also imposed in this case.

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THE ILL-EFFECTS OF TOBACCO ON THE THROAT AND NOSE.

By WILLIAM T. CATHELL, M.D., BALTIMORE, MD.

(Continued from page 68).

FOR the same reason, no one with decayed or broken teeth, or dental plates that rub the gums or cut the tongue or mouth, should either smoke or chew, for either of these may be the fatal starting-point. I have the record of five cases of epithelial cancer of the lips and tongue, four of which occurred in great smokers. Mrs. General U.S. Grant told me, in 1886, that General Grant's fatal case of throat disease began by his abrading a spot in the pharynx with the rough skin of a peach he was eating, and I have but little doubt that constantly bathing this abraded surface with tobacco smoke and tobacco-laden saliva, while his blood was already drenched and saturated with tobacco poison, did its fatal work for him.

Further, tobacco certainly acts as a depressant to feeble people and lowers their stamina; and such persons with a cancerous diathesis, or a syphilitic taint, or a scrofulous constitution, should not use it in any form, for in all such subjects the delicate pulpy tissue of the mouth, throat, and nose is very prone to inflammatory action, and also to ulceration from smoking or chewing, and in a large proportion of cases these degenerate into or light up the affection their predisposition or constitution indicates; and, in my opinion, no one who is aware that he has inherited a diseased or weak constitution, or defective vitality, should risk reducing his stamina further by the use of this agent; and science, in the form of physiology and chemistry, teaches, and my experience confirms, that if such an one uses tobacco while growing and maturing, he will not only have a weaker body and a weaker brain, but he will also be much more liable to catarrhal ailments of the upper air-passages; and I am quite sure that all throat and nose specialists will agree that tobacco has a softening and relaxing influence on the mucous membranes of the mouth, throat and nose, in many who attempt its use, and induces catarrhal and other affections, and that it is unwise for certain varieties of defective people to risk its bad effects.

Neither can persons suffering from any form of neurasthenia, smoke or chew without injury, and yet these are the very persons who oftenest have the *furor tabaci*; some smoking innumerable cigarettes, or lighting one cigar after another until they smoke six, eight, or a dozen a day.

Smoking also creates in some persons a persistent hacking cough due to tenacious mucus that accumulates in the pharynx and larynx, dependent on a morbid, infiltrated condition of the tissues of the palate and throat, which often degenerates into a condition that closely resembles clergyman's sore-throat, or into diseased throat and post-nasal catarrh combined. I make an emphatic interdiction of tobacco in all such cases.

I am also convinced that in some people there exists a close sympathy between the olfactory and the nerves of the mouth, and that in some the frontal sinuses are also invaded after tobacco excesses, as graveno and frontal headache often attest.

Besides the classes I have spoken of, whoever else finds that tobacco is injuring him should stop its use; but, unfortunately, many of those it is affecting never realise that it is doing them any harm, attributing all their ailments to other causes.

When tobacco induces a sense of tumefaction, heat and pricking in the throat, it should be let alone; and those whom it occasionally makes sick, and persons with a poor appetite, and those recovering from wasting sickness, are among the ones it injures most.

The habit of swallowing tobacco smoke and then expelling it through the nose, and also of coughing it into the lungs, are both very injurious, as they irritate and dry the mucous membrane of the pharynx, larynx, and trachea, and subject them to the various tobacco affections. Blowing it through the nose is also harmful, as it is a fruitful cause of the hypertrophic thickening of its mucous membrane, so often discovered in smokers, and the sense of smell is also greatly impaired by smoke-blowing.

I would not be understood to say that tobacco induces these affections only, but it is chiefly with them that I come in contact.

With feminine smokers and chewers I have had no experience, and with snuff-pinchers and snuff-rubbers but little; but I have encountered two cases of nasal polypi in females due to the use of snuff, which is less astonishing when we remember that all tobacco dust has a notoriously irritating affinity for the Schneiderian mucous membrane.

There is in my mind a strong suspicion that the high degree of injury that follows cigarette smoking is not due solely to the tobacco they contain, but is also due in part to its union with the so-called rice-paper wrappers in combustion; and I would here emphasise that in all smoking, and in chewing, too, much depends on the quality of the tobacco.

I can usually distinguish the oral cavity of the person who carries smoking to excess by the dusky red, velvety, or hyperemic appearance of the lining of the mouth, throat, and nose, and by the throat becoming irritable and hoarse upon every effort in speaking and singing.

Tobacco cautiously used is certainly a charming pleasure in ripe manhood and a solace in old age, and is rather beneficial than otherwise to thousands of healthy but careworn and toilworn

people, and also to tens of thousands of soldiers, sailors, and other idle people on whose hands time hangs heavily; and were one to ask me how to get the good out of it without risking the bad, I should advise him, among other things, to avoid smoking another's pipe, for fear of contracting disease—the largest indurated specific sore I ever saw was on a coloured man's lower lip, contracted from another's pipe; also, never to even smoke his own after it had become blackened and oil-soaked, and also never to light a stale stump or habitually smoke a short-stem pipe.

A cigar-smoker, or a cigarette-holder, or a new or freshly burned clay pipe, in point of safety and cleanliness, is far superior to putting mouth-to-weed in smoking, and one's whole mouth and throat should be thoroughly cleansed with water after every smoke.

Neither striplings with unformed constitutions nor weakly growing youths should venture to either smoke or chew, because in youth the vital centres are all unripe and delicate, and the mucous membranes are then marvellously hypersensitive to the effects of smoking and chewing; and if a growing boy's or an undeveloped puny youth's mucous membranes absorb either nicotine or the empyreumatic oil of tobacco, it poisons his springs of life and stunts his development mentally, morally, and physically; and if he expectorates these poisons, then the loss of saliva lessens the growth and repair of his delicate and easily-injured vital centres, and I am positive I have seen more than one unripe devotee stunted in body and mind, and I could at this moment name half-a-dozen young men and boys who are injuring their throats and noses with cigarettes, who will later in life have granular or follicular pharyngitis, somewhat akin to clergymen's sore throat, with an annoying discharge of mucus from the posterior nares into the throat, with relaxed tickling uvula, which may hang on for years, and neither get well nor kill, but be an annoyance to himself and to every one around. I know a feeble, narrowed-shouldered young man who is at this moment cigarretting himself to either the invalid's couch or the grave, through his delicate mucous membranes; and we, as hygienists, can do the weakly ones of the rising generation no greater service than to point out tobacco's injurious effects on their throats upper air-passages, etc. I have observed but few youths whose sensitive mucous linings could endure tobacco's toxic influence without showing symptoms of weakness, morbidity, and disease; and were I to recast our pharmacopoeia I would not only call hyoseyamus hensbane, aconitum wolfsbane, and arsenic ratsbane, but would be strongly tempted to give tobacco the synonym of youthsbane.

If anyone considers this indictment overdrawn, let him stand at Broadway and Baltimore-street, or at Charles and Preston, or at any other spot where he can see a constant stream of passing men, boys and youths, and carefully scan all the immature and sickly devotees who pass with cigar, pipe, cigarette, or quid in mouth, and he will soon detect written on many of their faces and figures the unmistakable signs of tobacco cachexy, some with pale, sharp, wizened visage, round shoulders, shuffling walk, and anxious, nervous, tell-tale addresses; others with complexions stained an ugly green or a dirty yellow or a dusky bronze colour, as if their blood were turned to a greenish or yellowish fluid instead of the natural red.

The mouth, throat, and nose of a healthy person have a clean, smooth, pale, pinkish or lilac hue. Examine these tobacco mouths, throats, and noses, and you will find every part unclean and ugly; probably a mouthful of saliva, as offensive as a bar-room spit-box, that must be either expectorated or swallowed before you can begin to examine; tongue furred, teeth incrustated with a dirty, scurvy like, greenish deposit; the buccal surface of the cheeks either in a state of active or sluggish congestion; gums, palatine arches, velum palati, pharynx, epiglottis, larynx, Schneiderian membrane, and all the other soft tissues turgid and injected, or velvety, granular, purple with hyperæmia, and streaked with mucus, instead of being a clean natural red.

You will find, however, in this flaccid throng, that all have one set of muscles that are firm and strongly developed, i.e., the muscles of the mouth and lips, made so by the local exercise of grasping the cigar, pipe, or cigarette with jaws, lips, and teeth, together with the constant gymnastic motions of chewing and spitting.

Some of this tobacco throng will present cases of ozena; others, catarrh of the throat and nasal passages, buccal inflammation, epiglottitis, relaxed and tickling uvula, chronic tonsillitis, laryngitis, trachitis, hoarseness or nasal twang in talking, due to thickening within the larynx, loss or impairment of smell, rotten breath, etc., which can easily be interpreted by the experienced; and I risk nothing in asserting that 5 per cent. of all constant smokers and 10 per cent. of all constant chewers, and 25 per cent. of all who constantly do both, are affected with one or another of these affections, and not 36 per cent. of immature and sickly smokers' throats and noses will be found in a perfectly normal condition.

I do not think anyone can safely use tobacco in any form in boyhood or early youth, and I am sure that smoking before the eighteenth year and chewing before the nineteenth year cut off from many a youth half his stamina and lessen all his natural talents and attributes; and I ask you to-day, as anatomists and physiologists, to think of a frail boy or a callow youth, who secretes and then ejects half a pint or a pint of tobacco-tinctured saliva daily, while both he and his friends are wondering why he is below par. You know and I know that it is as unnatural and harmful to him to keep his sensitive absorbents and lacteals bathed in tobacco-tinctured, tissue-altering saliva, either by smoking or

chewing, as it would be for a fifteen months' old colt to carry heavy weights on his back; and the delicately constituted youth, who learns to "chew" because others do, or to show his rough side, or tries to blow as big a cloud of smoke as the other fellow does, is injuring himself mentally, morally, and physically, and although he may not realise it now, yet the day is not far distant when he will know it, and know it with regret.

In conclusion, I believe the majority of those who arraign tobacco, from King James in 1641 down to the cranks of to-day, draw their indictments entirely too heavy. Personally, I have little or no prejudice against the proper use of the weed, either in smoking or chewing. Nor would I dare to say that every votary of tobacco is injured, or is on the road to ruin. Life is short, and everyone should get all the rational, harmless enjoyment out of it he can; and while I am perfectly willing to agree that some can use either mild or strong, good or bad tobacco very freely and experience no ill-effects, I am also quite positive that it is highly injurious to the upper air-passages of all youths, and also to numerous adults, and that to some of them the free use of even the mildest and best tobacco is almost akin to suicide; and I think that we as physicians should counsel all growing youths to shun it entirely, and every adult with defective stamina, or a tendency towards any organic disease, or a bias for any cachexy, or an inclination towards any affection of the throat or nose, either to let it alone for ever, or to determinedly limit its use to a harmless quantity.—*The Philadelphia Medical and Surgical Reporter.*

HOW "PURE" BUTTER IS COLOURED.

ONE particular butter colour examined by Professor A. R. Leeds yielded 4.80 per cent. of colouring matter. "The reactions given by the colour were those of annato. The solvent gave the tests for cotton-seed oil."

Annato is the colouring material almost universally employed in the manufacture of butter colour. Turmeric is sometimes added to modify the shade. These dye-drugs are extracted by boiling or by maceration in cotton-seed oil, lard oil, or other similar menstria. Among the published formulas are the following:—

- | | | | | |
|-----------------|-----|-----|-----|------------|
| (1) Annato seed | ... | ... | ... | 15 pounds. |
| Cotton-seed oil | ... | ... | ... | 10 ounces. |

Heat the oil to a temperature of 212 degrees F., add the annato seed, and allow to macerate for 12 hours. Let settle, and pour off the clear, dark-coloured oil.

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|---------------|-----|-----|-----|-----------|
| (2) Annatoine | ... | ... | ... | 6 ounces. |
| Turmeric | ... | ... | ... | 6 ounces. |
| Good lard oil | ... | ... | ... | 1 gallon. |

The colouring matter and the lard oil are boiled together for some time, and when cool the mixture is strained through a cloth.

ADULTERATED ENGLISH DRUGS REJECTED IN AMERICA.

THE chemist officially employed at the New York Custom House recently rejected a quantity of asafetida on the ground that it did not come up to the requirements of Customs regulations, i.e., 50 per cent. of it gum resin, and 3 per cent. of volatile oil. This standard is necessary to permit of its being admitted through the Customs, and a precaution against gross adulteration. The charge is made that this drug is being shipped to this country to a large extent from London, and is considerably inferior to that formerly arriving here from Bombay, known as the first-cut gum. The drug trade at the East is discussing the rejection of a number of parcels of asafetida by the appraisers. The trade are glad that the Custom officials have at last decided to stop the importation of poor or adulterated asafetida. It is claimed by one firm that only 15 to 20 per cent of asafetida gum was contained in some of the rejected parcels, while the Customs regulations are that not less than 50 per cent. of gum must be shown by analysis. A dealer said that he was glad that the importation of spurious asafetida had been stopped by the chemist in charge of the drug department of the appraisers' stores. He said that gravel, small stones, and sometimes cobble stones are found in the parcels. Other deleterious substances are found in the parcels, but fortunately they disappear before the article is ready for consumption.

WEST HARTLEPOOL AND FOOD ADULTERATION.

WEST HARTLEPOOL is one of the few places in which the Local Government Board's recommendation *re* samples is observed. During 1893, 43 samples were taken, of which five were adulterated and five doubtful. Dr. Gourley, the medical officer, says:—"I consider adulteration the meanest and most injurious form of fraud which is perpetrated on the public, and which seems to be on the increase. The public, and especially the poor, have no means of protecting themselves, except under this Act, hence the necessity of carrying it out actively and constantly."

We are glad to see that analyses of carbolic acid and powder were made. The necessity for this cannot be too strongly urged upon medical officers, as the amount of swindling by spurious disinfectants is enormous.

A CHIPPEWA county farmer who could not raise 1.50 dols. to pay for his county paper, sent 3 dols. to an Eastern man to learn the secret of keeping butter from getting strong. He received the reply: "Eat it."—*Milwaukee Sentinel.*

HOW SAUSAGE ROLLS ARE MADE.

AT the North London Police-court on February 23rd Charles Weil, a baker and confectioner out of business, living at 8, Grove Road, Holloway, was summoned by his apprentice, Alwis Leibold, to show cause why the indentures should not be cancelled and the £20 premium returned.—Mr. C. V. Young appeared in support of the summons; Mr. Ward, barrister, defended.—Mr. Young said that the defendant was formerly in business in the Seven Sisters Road, and the complainant was his apprentice. They complained that the boy was overworked, and that he became ill owing to the conditions under which he had to work. On some occasions the boy had worked twenty-one hours at a stretch. He was obliged to go to the Great Northern Central Hospital, and it was there found that he was suffering from paralysis and cardiac weakness. On his return to his employer's premises Weil declined to take him in, as he was too ill to work, unless his mother paid him 10s. a week. Subsequently the boy returned to the shop for his clothes. He was then accused of theft and arrested, but discharged by the magistrate. It was a further ground for complaint that the defendant had not taught the boy his business in a proper manner, and beyond this he had sold his business and gone away.—In his evidence the boy Leibold said that the defendant taught him to make sausage rolls of red ochre, pepper and salt, and brown bread soaked. He would swear that red ochre was used. Weil himself told him to buy the red ochre at the oilshop. He paid ½d. a pound for it. He had purchased some to bring to the Court that day, but he had to pay 1d. a pound for it. He heard the explanation made on behalf of Weil that a vegetable colouring matter was used, but it was not true. The vegetable colouring matter was worth from 6s. to 10s. a pound, so that it would be much cheaper to use beef. The defendant also taught him to mix the almonds for the Christmas cakes with size instead of the whites of eggs. He would swear that size was used. He purchased it himself at the oilshop. He attributed his illness to the smell arising from 600 eggs, which the defendant had bought at 1s. a hundred.—Mr. Ward: But you did not have to eat those eggs?—The Witness: No; but I could not help smelling them. (Laughter.) He would swear the defendant did not tell him that the use of red ochre to sausage-rolls was one of the tricks of the trade, but that he did not do it. When the defendant told him how to make the rolls he laughed, but the defendant insisted upon making them in his way. He did not complain of any one of these practices until he came to the court.—Mr. Young: For a very good reason. He is bound by the indenture not to divulge any of the secrets of the trade. (Laughter.)—Mr. Ward: You know that the defendant sold his business only a few days ago.—The Witness: I know that he was paid a deposit long ago, and that the price agreed upon for the business was £500. After the sausage-roll case Weil had to reduce the price to £450.—Mr. Ward: If Mr. Weil gets another shop will you go back to him? The Witness: No, because he threatened my life on February 6th.—The further hearing was adjourned for a fortnight.

ARTIFICIAL ICE.

THE Massachusetts State Board of Health concludes, from investigations of artificial ice, that artificial processes of freezing concentrate the impurities of the water in the inner core or the portion last frozen, that the impurities are least if distilled water is used, that the number of bacteria in artificial ice is insignificant, under the prevailing methods of manufacture, and that the amount of zinc found in ice is sufficient to cause injury from its use.

MR. GLADSTONE'S LAGER BEER.

FROM a Gladstonian enthusiast we learn that "Mr. Gladstone has never been a total abstainer, although he has, of course, always been extremely moderate. He usually takes a glass or two of claret at luncheon and dinner, and after dinner a glass of light port. Of recent years he has been recommended to take some light lager beer in the middle of the day. In view, however, of the fact that many lager beers contain drugs as preservatives, it was recognised that the veteran statesman's lager should be above suspicion, and Bruster's pilsener lager was, after a careful examination of the most noted beers, the one selected and recommended for the Premier's use.

Three Highest Awards, Chicago, 1893.

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LEGAL.

"PEARL" COCOA.

JONES v. JONES.

THIS was an appeal by a grocer carrying on business at Pentre, Glamorganshire, from the decision of certain justices sitting at Pontypridd, who had convicted him under the Sale of Food and Drugs Act of having sold to Mr. Evan Jones, an inspector under the Act, an article not of the substance, nature, and quality demanded by the purchaser. Mr. Grain, who appeared for the appellant, said his client appealed to quarter sessions against the conviction, but unfortunately the two magistrates who heard the appeal disagreed, and the appeal was dismissed. The case for the respondent was that on the 22nd of December, 1892, he went to the shop of the appellant, and asked for a quarter of a pound of cocoa. The appellant handed him a packet which he had wrapped in a piece of white paper, and the inspector paid two pence for it. The inspector sent the cocoa to the public analyst, who had given a certificate that the sample contained 30 parts of cocoa and 70 parts of starch and sugar mixed therewith. The manufacturers of the cocoa—Pearl cocoa—in order to meet the requirements of the Act of Parliament put on the label "Cocoa combined with other ingredients the perfect purity and wholesomeness of which are guaranteed." The price at which the article was sold did not give the manufacturers or vendors a larger profit than on pure cocoa. He (the learned counsel) submitted that the label on the packet was a sufficient protection to the appellant, and that there was no evidence that the admixture had been made fraudulently to increase the bulk, weight, or measure of the article, or to conceal its quality. Mr. Stephen, in opposing the appeal, submitted that there was no label in this case, according to the Act of Parliament, because the packet when handed to the purchaser was wrapped in paper. The Act said the label must be distinctly and legibly printed on or with the article, and it could not be said to be a legible label when it could not be seen. The inspector had no opportunity of seeing the notice when the packet was handed to him. Mr. Justice Mathew.—But before he had the cocoa analysed he saw the label. Mr. Stephen said that was so, but his contention was that that was too late. Further, he argued that the addition of the starch to the cocoa was done with the view of fraudulently increasing the bulk. Their lordships held that the conviction was wrong, and must be quashed. There was a label showing what the article consisted of, and there was not the smallest ground for saying that there was any intention by the mixture to fraudulently increase the bulk. Appeal allowed with costs.

WEIGHING TEA WITH PAPER.

IMPORTANT PROCEEDINGS.

At Leeds on Feb. 22nd Messrs. Green and Co., tea merchants, Balcony, Covered Market, Leeds, were charged with having in their possession unjust scales. The hearing of the case was adjourned from last week because the magistrates could not agree. Mr. Harrison, town clerk, in opening the case, said that on January 25th the defendants' shop was visited by an inspector of weights and measures. He found a person named Martha Green weighing out what purported to be single ounces of tea. This person, acting for Messrs. Green, had weighed a lot of packages during the time the inspector was in the shop. The inspector noticed when the scoop was taken off there was a piece of paper lying in the scale, which could not be seen when the scoop was in its place. There would be, he understood, no question as to this. The inspector asked why the paper was there, and added it made the scale 1½ drachms unjust. The lady replied that it was placed there for convenience. The inspector observed that when he visited the shop twice previously the practice was not being then followed. She answered they had only recently begun to do this. The summons was taken out under Section 25 of the Act, which charged defendant with being in possession of an unjust scale, and not with fraud. The only way in which defendant could succeed in having the case dismissed was by proving that it was the custom of the trade to weigh the tea as he had done, and that there was a quiescence on the part of the customers. There could not be acquiescence as the customer could not see the paper. With regard to the possible defence that it was the custom, he would call witnesses to prove that it was not. Wm. Taylor Denton, inspector of weights and measures, corroborated. Mr. Robert Alnwick, manager for Messrs. Stables and Co., tea dealers, Leeds; Mr. D. Duckworth, manager for Messrs. Altham and Co., tea dealers, Leeds; and Mr. H. McKenzie Forbes, provincial director of Messrs. Brooke, Bond, and Co., Limited, tea merchants, said it was not the custom of the trade to weigh the paper with the tea. The latter gentleman said that in weighing 100 lbs. of tea in the paper, there would be a gain of 7 lbs. 3 ozs. Defendants said that it was the custom of the trade among people who sold 10z. packets to weigh the paper with the tea. The paper was placed there for convenience. A lot of time would be wasted if when every ounce of tea was weighed, the paper was placed on the scale with the tea. If they did not weigh the paper with the tea they could not continue business. The three witnesses called, he alleged, did not do a large trade of 10z. packets of tea. He called a number of witnesses in support of his contention that it was the custom to weigh tea and paper together, but the Bench came to the conclusion that the law had been infringed, and fined defendant 2s. 6d., including costs.

NEAL v. DEVENISH.

(Before Justices Mathew and Cave.)

THIS was an appeal from the decision of the justices of Dorsetshire, who had convicted the appellant, Mr. William Neal, under the Sale of Food and Drugs Act, and the question was whether the particulars set forth in the summons were sufficient within the meaning of the Act. The appellant had been summoned, on December 11th, for having sold, to the prejudice of the purchaser, milk "which was adulterated, and not of the nature, substance, and quality demanded by the purchaser." When the case came on for hearing, the appellants' solicitor objected that the particulars of the offence had not been stated in the summons in accordance with the requirements of the Act. Mr. Hobler, who now appeared for the appellant—the other side was not represented—contended that the mere allegation "which was adulterated" was not sufficient, and that the summons should have set forth the precise nature of the adulteration. The Court held that the particulars were sufficient, and that, as the appellant had not applied to have the case adjourned on the ground of surprise, he had been rightly convicted. The appeal was dismissed with costs.

JONES, APPELLANT—BERTRAM, RESPONDENT.

THIS was another milk adulteration case, and it raised a question under that important enactment, which excuses the seller if he has bought the commodity in question with a warranty of purity or genuineness, the question being whether it applies unless the seller shows that the article was sold in the same state as when he received it, and it has been held, it will be seen, that it does not. The enactment referred to, section 25 of the Act of 1875, is that if the defendant in any prosecution under the Act proves to the satisfaction of the justices or Court that he purchased the article in question as "of the same nature and quality as that demanded by the purchaser, and with a written warranty to that effect, and that he had no reason to believe at the time when he sold it that the article was otherwise, and that he sold it in the same state as when he purchased it, then he shall be discharged," etc. In the present case the charge was, that Bertram, a refreshment contractor at the Crystal Palace, had, as alleged on the 12th of October last, sold to the prejudice of the purchaser, milk which was not of the nature and quality demanded by the purchaser—that is, there being 36 parts in 100 of added water. The case stated that on October 12th, five churns of milk were delivered at the Exhibition by a servant of one Morish to the servant of Bertram with this warranty, "Five churns, 15 gallons. Warranted pure milk, from which the cream has not been extracted, or any water or other substance added to such milk when delivered." The five churns were received by a servant of Bertram, who tested the milk with a lactometer, by which it appeared that the milk in four of the churns indicated '32, the point given as the standard for pure milk, while in the fifth it only indicated '26. The milk, however, in the fifth churn being afterwards tested, was found exceptionally good, showing that the lactometer was unreliable. The milk now in question, however, was taken from one of the four other churns. A servant of Bertram took out of one of them six quarts, which were poured into an urn on the counter, and which was in the care of Bertram's servants except for five minutes at a time, when the keeper of the next bar would have charge, and Bertram's servants proved that the milk was not tampered with to their knowledge. Of the six quarts two were sold, and about 7 o'clock in the evening the appellant purchased a sample of milk from Bertram's bar, which was found upon analysis to contain 36 per cent. of added water, though another sample afterwards taken was found to be only deficient in butter fat, and no mention was made of added water. The magistrate found that Bertram had purchased the milk under a written warranty of its purity, and had no reason to believe that when it was sold it was otherwise, and, so far as the evidence went, they said, "the state of the article had not been altered by Bertram or his servants." But they found that the milk was adulterated as stated, and that, in fact, the sale was to the prejudice of the purchaser, and they did not find that, in fact, the milk when sold was in the same state as when received by seller. The magistrates dismissed the summons on the ground that Bertram had purchased the milk as genuine, and with a written warranty to that effect, and that he had no reason to believe that at the time when he sold it it was otherwise, "and that there was evidence before me from which I might infer that, assuming that it was not sold in the same state as when he purchased it, the change was not made by himself or his servants, or to his or their knowledge." But he stated a case on the question whether the decision was right in point of law. —Mr. Macaskie appeared on behalf of the prosecutor, who appealed, and argued that the magistrate was wrong, as the Act required in the case of a warranty that it should be proved that the article when sold was in the same state as when received. —Mr. Lyon, for the respondent, argued that it might fairly be inferred that the milk must have been in the same state when sold as when it was received. —The Court, however, thought otherwise, and upheld the appeal. —Mr. Justice Mathew, in giving judgment, said the conditions of the section as to warranty had not been satisfied. It was not proved and was not found that the milk was in the same state when sold to the customer as when it was received. There was strong evidence that the milk when delivered to Bertram corresponded with the warranty, but when it was sold to the prosecutor it had clearly been adulterated. It was then for the seller to show not only that he had received it under a warranty of genuineness, but that when sold it was in the same state as when received. But this the magistrate had not found. The case, therefore, fell short of what was required to relieve the seller, and the magistrate ought to have convicted him. —Mr. Justice Collins was of the same opinion. —Appeal allowed.

MORE SOMERSET HOUSE WATER ANALYSIS.

DR. GOURLEY, medical officer of health, West Hartlepool, in his report for 1893, says: "In connection with one well which I suspected as being impure from the result of my own examination and knowledge of its surroundings, and the County Analyst's report, which certified that it was impure, and under the microscope showed "surface organisms, many bacteria (species various), much mineral matter." Another analyst certified that the water was pure, and on reference to Somerset House they certified that it was pure, but gave no report as to microscopic examination."

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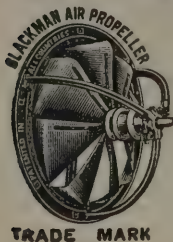
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THE STEARINE IN LARD CRUSADE.

WHOLESALE PROSECUTIONS.

AT Arundel, on February 26th, George Thomas Groom, grocer, etc., of 11th street, Littlehampton, was summoned for selling lard adulterated with 12 per cent. of beef stearine. Captain Drummond (chief constable) was in attendance: Mr. Wannop, of Chichester and Littlehampton; appeared for the defendant; and Mr. Palmer, of Southwick, represented the manufacturers of Slattery's lard.

P. S. Cross deposed that on the 13th inst. he called at Mr. Groom's shop in 11th street, Littlehampton, and asked for 1lb. of lard, and the assistant, going to a bladder of lard, which was on a shelf behind the counter, served him. Witness asked the price, and he replied 7jd., which witness paid, stating "This sample is purchased for the purpose of analysis by the public analyst, and I am acting under instructions from the Chief Constable (of West Sussex)."

Superintendent John Kennett, inspector of police and inspector of weights and measures for West Sussex, said that on January 13th he received the parcels of lard from Sergeant Cross. The same evening he sent one of the samples, with others, by registered parcel post to the public analyst, and on the 3rd of the present month he received the certificate produced to the effect that the lard contained 12 per cent. of beef stearine. Cross-examined by Mr. Wannop, witness said he had sent many samples of lard to the public analyst, but only two of lard.

Mr. Palmer asked if the public analyst was present, and received a negative reply. He remarked that he should like to ask him a few questions as to the certificate.

Mr. Wannop then addressed the Bench. His main point was that the lard supplied to Sergeant Cross was warranted by the maker, Mr. Slattery, of Ireland, to be pure, and Mr. Slattery, he believed, was prepared to state the component parts. Mr. Wannop produced the portion of the bladder from which the analysed samples of lard were taken, and which bore the stamp "Warranted pure lard, J. M. S.," and this he submitted was an ample defence. He called attention to the fact that his client did his best to supply the best article he could get, and did not, as in most cases, sell lard manufactured in America, where large quantities of beef stearine were used. Mr. Slattery would also show that the certificate of analysis was incorrect, because it stated that the lard contained 12 per cent. of beef stearine. He regretted the absence of the public analyst, and had he had earlier notice to defend, he (Mr. Wannop) would have secured his attendance. If, however, their worships were of opinion that he had no defence under Section 25 of the Food and Drugs Act, he would ask them to send a sample to Somerset House for independent analysis. His client was perfectly satisfied that there was not one tithe of beef stearine in the lard.

Mr. Palmer, for the manufacturers, said he did not admit that there was any warranty so far as his clients were concerned. He was present with the manufacturer from Ireland, who would swear that he did not even know what stearine was. If there was any stearine in the lard it must have been in the pig (laughter).

Mr. Jeremiah Morte Slattery, of Tralee, Ireland, manufacturer of lard, deposed he had been connected with the trade for the last 27 or 28 years. The lard was made from the pigs killed by his firm. The fat was boiled in a vat; and the oil was skimmed off the surface, put into a pan, and refined by the fire. It was subsequently strained off and put in bladders, kegs, or packages; and the bladders were cooled in cold water. Further examined, witness said he did not use stearine. He did not know what it was. He had never seen it, and an ounce of it could not be got in Tralee for £1,000. All the lard he sold was from his own manufactory and his own pigs. In answer to Mr. Wannop, witness said he could identify the impression of the rubber stamp. The lard in question was his manufacture. He sold large quantities of lard. He had never had it analysed, but whatever the lard contained came from the pigs. Messrs. Yeates, Accock, and Copeman supplied the lard to the trade. By Superintendent Kennett—No warranty was asked for the lard by Mr. Groom or anyone else. All his lard was stamped like that produced.

William Stephen Scott, clerk to Messrs. Yeates, Accock, and Copeman, said his employers acted as Slattery's agents. They supplied the articles in question to Ruck Bros. By Mr. Kennett—The firm never gave a warranty.

Thomas Joan Kirk, warehouseman for Ruck Bros., of King William-street, City, deposed that that firm supplied Mr. Groom, of Littlehampton, with Slattery's lard. He produced the invoice, Edward Chambers, in the employ of Mr. Groom, of Littlehampton, deposed to supplying Sergeant Cross with a quantity of lard from a bladder. Cross-examined, witness said there were other bladders close to the one from which Sergeant Cross's 1lb. was sold, but they were intact.

George Thomas Groom deposed to the last witness informing him of Sergeant Cross purchasing the lard for analysis. He told his assistant to serve him "most decidedly." Afterwards the assistant gave him the skin in which the lard had been wrapped, and, as the lard was to be analysed, he kept that portion which bore the stamped label. He (Mr. Groom) bought at the best places, and went in person to buy Slattery's lard, as he understood it was the best. By Mr. Kennett—He received no warranty other than that stamped on the bladder and the barrel which contained the consignment.

The Chairman said that Mr. Groom's defence was a good one. The stamped label on the bladder and the barrel "Pure lard" and the initials of the firm were sufficient warranty, and the magistrates therefore dismissed the case. With regard to the question as to whether the lard was adulterated, the Bench gave no opinion.

Superintendent Kennett asked that the samples and the piece of skin bearing the warranty might be impounded.

Mr. Wannop said he had not the slightest objection, and the Bench granted the application.

The magistrates declined to allow defendant costs, but granted Superintendent Kennett's application for a summons against the manufacturer on the grounds of alleged false warranty.

At Merthyr Police-court, on February 26th, before Mr. North and Mr. Smyth Messrs. Pegler and Sons, grocers, were summoned under the Food and Drugs Act for selling at their branch establishment in Victoria-street, Dowlais, lard which was not of the nature and substance demanded by the purchaser. Alderman G. C. James appeared for the defence. It appeared that on January 26th Inspector Cook, an inspector under the Act, visited the shop and purchased half-a-pound of bladder lard. A sample was sent by Superintendent Thorneycroft next day to Dr. Morgan, the public analyst, Swansea, who certified that it contained of genuine lard 80 parts, and of meat fat 20 per cent. Alderman James, who had served notice of defence upon the police, submitted that defendants having bought the lard from Messrs. Hazlehurst, wholesale dealers, upon a guarantee that the article supplied was "pure lard," and the article having been retailed in the same state as it arrived, defendants were not liable. He called J. C. Evans, defendants' Pontypool manager, and Evan Davies, the manager of the Victoria-street branch Dowlais, to give evidence upon these points, and Mr. North dismissed the case, remarking he did not know about reaching the wholesale people. Alderman James said as far as Messrs. Pegler and Sons were concerned they did not object to these proceedings. They did all they could to ensure the public a supply of genuine articles, and Messrs. Hazlehurst wished to state that the lard did not contain anything like 20 per cent. of meat fat. This lard came from America, and it appeared they (the manufacturers) were obliged to put in a certain amount of meat fat—American lard being different from English—otherwise it would not be solid. Mr. Smyth remarked that they were obliged to add some meat

fat to make it firm. Alderman James said he saw a case the other day in which independent evidence was given to the effect that some lard in question had not been added to to the same extent as alleged. He added that Messrs. Hazlehurst ought, perhaps, to have been there, but they did not seem to take enough interest in the proceedings. The lard received from them by Messrs. Pegler had been returned.

At the same court, Wm. Jones, grocer, Bethesda-street, Merthyr, was summoned for a similar alleged offence. Mr. Beddoe appeared for the defence. Police-constable Rees Davies purchased of defendant's daughter, on January 26th, half-a-pound of lard, and handed it at the door to Superintendent Thorneycroft, who divided it and sent one sample to the county analyst, who found it contained 76 parts of genuine lard and 24 parts of beef fat. The defence was that the lard was received from Messrs. Spears and Co., Bristol, as English lard, and was retailed by defendant in good faith as it was received. Evidence was called to bear this out, and it appeared that some correspondence had passed between defendant and the wholesale firm, the latter seeming to take the position of having only sent out lard that was genuine, but it was not contended that there was a prior guarantee as in the last case. Mr. North said it was unfortunate that there was no provision made for the prosecution of wholesale dealers. The only persons the police could deal with were the retail dealers. Jones appeared to have acted perfectly *bona fide*, but the fact remained that the lard as described by the analyst had been sold at his premises. He would be fined 1s. and costs. Mr. North added that he hoped Mr. Beddoe would take proceedings against the wholesale dealers (as Mr. Beddoe had intimated his intention of doing). Mr. Beddoe: Yes, sir.

At the Wakefield West Riding Police-court on February 23rd, Mr. John Frobisher, an assistant at the Loffhouse Branch Store of the Leeds Industrial Co-operative Society, Limited, and Messrs. Irwin Brothers, lard refiners, Liverpool, were summoned for selling adulterated lard.

Mr. Highley, who appeared in support of the summons, said at the outset that the cases were really test ones for the trade, and they were defended in the interests of the trade.

The case of Frobisher was taken first. Mr. Highley, in opening, said that on October 23rd last, Mr. Talbot Kyle, the inspector, called at the Loffhouse Branch Store, belonging to the Leeds Industrial Society, and made certain purchases, one of which was half-a-pound of lard, for which he paid 3d. The inspector forwarded the sample of lard the same day to Mr. A. H. Allen, of Sheffield, the West Riding analyst, who certified that it contained not less than 12 per cent. of fat, probably beef stearine, which is a substance foreign to lard. He would call Mr. Allen, and also the County Analysts for Nottinghamshire and Durham, also Mr. Harris, of Colne, Wiltshire; Mr. Morrell, a large lard refiner at Liverpool; and Mr. Sullivan, a representative of Messrs. Palethorpe, Limited, of Dudley Port, all of whom would give evidence as to the making of the lard, and as to the necessity of the addition or otherwise of foreign fat, such as beef stearine.

Inspector Kyle proved the purchase of the sample of lard.

Mr. A. H. Allen, of Sheffield, gave the result of his analysis and stated in cross-examination that some delay took place in the making of the analysis. Mr. Edgar, of Manchester, who defended, raised an objection whilst Mr. Allen was under examination to the effect that the lard had not been analysed, as required by the Act with all convenient speed, as 53 days were allowed to elapse between the sale of the lard and the giving of the certificate, and 17 days further—together 70 days—before the information was laid. Mr. Edgar submitted that the summons had not been issued within a reasonable time. The Court ruled against Mr. Edgar. Mr. Allen, on being further examined by Mr. Highley, said the sample of lard was just as fit for analysis now at Somerset House or anywhere else as it was the first day that it was made. Old-fashioned lard used to be made from the belly only of the pig, but since Chicago was built it had become the fashion to make lard from the whole hog, and lard was not now so hard as formerly. Beef stearine made lard stiffer, and its introduction into lard enabled manufacturers to pass off inferior lard as of a superior quality. Cross-examined, Mr. Allen said the sample of the lard he received from Mr. Kyle was thoroughly tested within a week from his receiving it. He had on previous occasions taken as long as 53 days before issuing his certificate of the analysis, as he was a very busy man and he had been ill. In reply to the Court: I have been County Analyst for Yorkshire for about 18 years. In answer to Mr. Edgar: The reason why the delay took place in the issue of his certificate of analysis was because about that time he was engaged in making a series of researches with the hope of improving the process and methods of detecting beef stearine in lard. He understood this lard was sold to the Leeds Industrial Society in August, when the weather was very hot. He did not think any lard would be in such a soft state last August as to be drawn off like beer out of a barrel. He would not be surprised to hear it alleged that the addition of beef stearine to refined lard added to its cookery properties, but he would be surprised to have the allegation proved.

Mr. Otto H. H. analyst, said he received a sample of the lard, and on analysing it he found it contained 12 per cent. of beef stearine, and 88 per cent. of lard. For ages lard consisted of pure pig's fat, but recently stiffening had become general. This stiffening was accomplished by the addition of extraneous substances such as beef stearine, which could be purchased for 3s. 6d. per cwt., whilst lard was 41s. 6d. The honest way would be to label such lard as lard and beef stearine, just the same as margarine was labelled. He thought the present sample of lard was as capable of analysis now as it was on the day it was purchased. Cross-examined: American lard was more fluid than English lard. It was impossible to say absolutely whether there was 12 per cent. of beef stearine in the sample. The summons against Frobisher was dismissed and the other case was adjourned.

At Chichester Police-court, Herbert Mitchell, a grocer, of Bognor, for whom Mr. G. H. King, Forsea, appeared, pleaded guilty to selling lard adulterated with 10 per cent. of beef stearine. Mr. King, on the part of defendant, urged that it was American lard, and that it was necessary to mix beef fat with it for the purpose of solidifying it. The mixture was not remunerative to the makers, beef fat being dearer than lard, and was not injurious to health. The Bench imposed a penalty of 6s. and costs.

AMERICAN HAMS AND BACON AS ENGLISH AND IRISH.

THE first of a series of prosecutions instituted by the Bacon Curers' Society of Great Britain and Ireland against provision merchants in the ten principal towns of England, Scotland, and Wales, for selling American hams and bacon as English and Irish, was proceeded with on February 26th at Wrexham. Mr. Paxton, of Liverpool, conducted the prosecution. The other cities and towns in which similar proceedings are to follow are Liverpool, Edinburgh, Cardiff, and Bristol.—The first case was against Messrs. H. and T. Jones, of the Lion Stores, Wrexham.—The defence was that this was a general custom in the trade, and that no fraud was intended. The Bench fined defendants 40s. and costs. The charge against Mr. C. K. Benson, of the North Wales Supply Stores, was dismissed, but fined his manager of the Hope-street shop, John Jackson, £1 and costs. Mr. John Brunt, Bridge-street, was also fined 40s. and costs.

THE TALE OF A NATION'S DECAY.

MR. HENRY MAINWARING HOLT, medical officer for Malton, in his report just issued, has to announce that "during the ten years between the taking of the Census of 1881 and that of 1891, the population of the district had decreased by 362, equal to 6·86 per cent. on the population of 1881. Unfortunately that decrease is steadily maintained, and threatens to continue from the present outlook of agriculture, since whatsoever is inimical to that industry is also prejudicial to the interests of this district. The general conditions of agriculture at the present time assume the proportions of a national disaster. There are certain imports for certain purposes which strangle the efforts of the honest farmer and make adulteration and fraud very easy operations. The importation of maize for distilling purposes, together with "patent spirit," "made in Germany," for blending purposes, have caused thousands of acres to pass from tillage to pasturage, and driven the labouring agriculturists into towns already too congested. No doubt the excessive taxation of spirit in the first instance has something to do with the bringing about of the present state of affairs, alike wrong to farmer and consumer. If such beverages were made from home-grown grain only, and placed under the Merchandise Marks Act, agriculture in this country could not suffer, but might improve on its present sad condition. Undoubtedly there are many potent and hidden factors at work which time can only discover, and which legislation may or may not remedy."

No samples of milk were taken for analysis during the entire year. Mr. Holt says: "Taking into consideration the fact that this district is a great centre of food supply, I am of opinion that it would conduce to the general welfare if a public analyst were appointed, to whom samples of food and drugs offered for sale might be submitted. And I would again ask you to give this matter your attention, since up to the present no action seems to have been taken to protect the public in this direction."

A HINT TO THE PHARMACEUTICAL SOCIETY.

THE DANGERS OF TINNED SALMON.—Mr. F. Price, the Borough Coroner for Salford, held an inquest on February 28th, concerning the death of Walter Smaller, aged four years, the son of a foreman carriage cleaner on the railway, living at 4, Fleetwood-street, Salford. On Saturday, the 10th February, the deceased, along with his parents, partook of some tinned salmon. On the following afternoon the deceased commenced to vomit, and was again taken ill on the Sunday evening. A doctor was called in on the Tuesday, and he attended the deceased up to the 25th February, when the child died. Dr. S. McNair, who was called to the boy, said he found him suffering from constant vomiting, and collapse or exhaustion produced by the vomiting. The symptoms were such as would be produced by inflammation of the stomach or brain trouble. He had made a post-mortem examination, and found that the symptoms were the result of some irritant substance taken in the stomach, and possibly of the tinned salmon. The jury returned a verdict that the child died from the effects of inflammation of the stomach and bowels, produced by eating tinned salmon as food.

This poisoning by tinned salmon offers a splendid opportunity to the pharmaceutical gang to "corner" the sale of tinned foods for the chemist. Statistics can be made to show a percentage of cases of food poisoning, mostly by tinned foods—higher even than is the case with carbolic; we say "made," because if the statistics didn't make it, well there are persons are quite able to make the statistics, so we expect in due course the gang to ask why deadly poisonous tinned foods are outside the scheduled list, and demand that the chemists shall be the sole persons permitted to vend "coppered" tinned peas, or "ptomained" sardines, along with the adulterated drugs, in the sale of which they have for so long enjoyed a monopoly.

PRESERVING EGGS.

It is well known that although any "grease" will preserve eggs for a certain length of time, the flavour penetrates and seriously affects their quality, as also does any varnish. The only absolutely certain and flavourless protection for eggs is petroleum jelly or vaseline, and this fact appears to be almost unknown. If eggs, within a day or two after being laid, are rubbed over thinly with a rag soaked in vaseline, they will keep, with all the flavour and curdiness of fresh-laid eggs, for at length six months without the slightest change, except that they slowly lose flavour and become rather tasteless, although this does not affect their quality in any way except for boiling. The packing material used must be perfectly free from taste or smell, as this would be absorbed by the vaseline and transferred to the contents of the shell, and for this reason we always use salt for packing, keeping the same salt and boxes from year to year. No doubt powdered chalk or cork dust would answer the same purpose, but as salt answers our purpose

perfectly we have made no further experiments in this direction.

DISGRACEFUL ARRANGEMENTS AT A HOSPITAL.—At a meeting of the Hendon Local Board, it was stated that owing to the absence of a mortuary at the Hospital, the dead bodies from the infectious hospital have to lie till buried in the children's room, and are washed in the same room where cooking for the other inmates is carried on.

APPOINTMENTS VACANT.

ASSISTANT COUNTY SURVEYOR (Worcester), March 15th.—The Highways and Bridges Committee of the County Council of Worcestershire are prepared to receive applications for the appointment of an Assistant County Road Surveyor, to act under the superintendence of the County Road Surveyor, at the salary of £150 per annum, to include all expenses. The officer will be required to devote the whole of his time to the service of the Council, and to give security in such amount and of such nature as may be fixed and approved by the Finance Committee of the Council. Applications must be marked "Assistant Surveyor," and sent, accompanied by recent testimonials, not exceeding three in number, not later than 3 o'clock on Thursday, March 15th, 1894. Wm. Nichols Marcy, clerk of the County Council, County Hall, Worcester.

BUILDING AND DRAINS INSPECTOR (Croydon), March 14th.—The Corporation of Croydon require the services of a competent person to act as Building and Drains Inspector in the northern part of the borough. He must possess a thorough knowledge of building operations and drainage construction, and will be required to devote the whole of his time to the duties of the office. Salary, 50s. per week, with biennial increments of 4s. per week, until a maximum of 60s. per week is obtained. Applications to be made upon forms, to be obtained from the borough engineer, 8, Katherine-street, Croydon, and to be sent to Mr. C. M. Elborough, town clerk, 8, Park-street, Croydon, with three copies (not originals) of testimonials of recent date, by 11 a.m. on 14th inst.

ENGINEERING ASSISTANT (Ipswich), March 14th.—Required, at once, a temporary Engineering Assistant for about three months. Competent to take levels, and prepare plans, sections, and details for sewerage works. Salary 50s. per week. Applications, by letter, with copies of not more than three testimonials (which will not be returned), to Mr. E. Buckham, Town Hall, Ipswich, by 14th inst.

ENGINEER (Tunbridge Wells), March 10th.—The Council invite applications for the appointment of a mechanical Engineer to take charge of the waterworks pumping engines. He must be capable of doing all ordinary repairs to the engines and pumps. Age not to exceed 35. Wages to commence at £2 5s. per week, with a house, rent free, and coal provided, and to rise to £2 10s. per week at the expiration of one year if he has given every satisfaction. Applications, in applicants' own handwriting, with copies of three testimonials of recent date, to be sent to Mr. W. C. Cripps, town clerk, by March 10th. Canvassing members of the Council, directly or indirectly, will disqualify any candidate.

SUB-INSPECTOR OF NUISANCES (Bradford), March 10th.—The Sanitary Committee of the Bradford Corporation require the services of two competent persons to act as Sub-Inspectors of Nuisances. Age not to exceed 40 years. Salary £85 per annum each and uniform. Applications, stating age and previous occupation, to be delivered at the office of Mr. W. T. McGowen, town clerk, Town Hall, Bradford, by March 10th. Any information may be obtained at the Town Clerk's Office.

INSPECTOR OF NUISANCES (St. Albans), March 13th.—The Town Council of St. Albans will, at the Town Hall, St. Albans, on 13th inst. at 7 p.m., appoint an Inspector of Nuisances for the city of St. Albans at a salary of £100 per annum for one year from 25th inst. Apply to Mr. A. H. Debenham, town clerk.

SURVEYOR AND SANITARY INSPECTOR, March 10th.—For the burgh of Buckie. Salary, £80 per annum.—Mr. John L. McNaughton, clerk to the commissioners, Buckie, N.B.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

D. LENNOX & SONS.

LONDON OFFICE:

41, PALL MALL,

S.W.

Bonded and

Bottling Stores,

DUMFRIES,

N.B.

LENNOX'S WHISKY

36/-

42/- 48/-

PER DOZEN CASH.

Delivered within London

Carting Circuit, or Carriage

Paid to nearest Railway Station

in Great Britain.

Do not drink Blends of Malt Grain
and Potato Spirit.Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.Fretful
Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates extracted from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers find that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., ½-lb. sample in handsome enamelled box sent free, on receipt of 3d for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol, Cyprus: "I have never found anything to come up to it for neuralgic and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

Food and Sanitation.

SATURDAY, MARCH 17TH, 1894.

THE METHODS OF THE ANTI-VIVISECTIONISTS.

SOME months ago the old women of both sexes, whose gullibility supplies the means for the silliest of slander propagandas against the medical profession, lashed themselves into a white heat of passion because Professor Horsley nailed some of their lies, and did not hesitate to rightfully stigmatise their utterer. Our readers know the professions of the gentry who make an easy living out of the anti-vivisection humbug. The following exposure of their practices is one for which haters of cant owe some gratitude to Dr. Ruffer. It is a manly bit of plain-speaking of a kind unfortunately too scarce in this age of "philanthropic deadheads" and of societies to benefit everything save what is practical or necessary for England. Dr. Ruffer says in a letter to *The Times*:—

"THE BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

"Sir,—As the Victoria-street Society for the Total Abolition of Vivisection has taken a prominent part in the agitation against the erection of the institute at Chelsea, and as notice has been taken of this agitation in your columns, it seems only right that the public should be informed of the way in which this war against scientific investigation is carried on. I beg, therefore, to ask you to be good enough to find a space for the enclosed document, which was written by the assistant secretary immediately after the conclusion of the interview, and I may add that I am prepared to take every responsibility for the statement made in it.

"For the information of your readers it may be stated that Arthur Westcott is a professional lecturer of the Victoria-street Society, and has lately been employed in getting up an agitation

in Chelsea and the neighbouring parishes against the British Institute of Preventive Medicine.—I am, Sir, your obedient servant,

"M. ARMAND RUFFER,

"Hon. Sec. British Institute of Preventive Medicine.

"101, Great Russell-street, W.C., March 8th.

"On March 6th a person called at the office of the institute, at 101, Great Russell-street, to ask for particulars concerning the institute, as he said he had seen a letter in the Chelsea papers by Dr. Ruffer, stating that information would be given to all who applied to Dr. Ruffer for it. On my leaving the room to inform Dr. Ruffer, the man sat down at my desk, and was seen by Dr. Ruffer and myself to be reading the documents which happened to be lying about.

"On Dr. Ruffer asking him his name, he gave it as 'John Vernon,' of the Kingsland-road, Chelsea. Dr. Ruffer told him this was not true, that his name was Arthur Westcott, and that he was the paid agitator of the Victoria-street Society. This he stoutly denied over and over again, but, as I knew the man by sight and told him I had heard him lecture under the name of Westcott, he at last owned that he had what he called a 'double-barrelled' name, and that in full it was Arthur John Vernon Westcott. Dr. Ruffer pointed out that he never had so signed or so initialised his name, and asked him if he thought it was honest to say his name was John Vernon when it really was Arthur Westcott, and his reply was that, if he had given his proper name he thought it most probable that he would not have been able to obtain the information he wanted. Dr. Ruffer told him that, as he had been lecturing at Chelsea during the last fortnight about the proposed institute, common honesty required that he should have made his inquiries before beginning to lecture. Dr. Ruffer added that he, Westcott, had never once asked for information about the proposed institute, and the members of the Victoria-street Society had never made any endeavours or any inquiries at the office to ascertain the true aims and objects of the institution they are now abusing, and that, moreover, many of the statements which had been published by

him, Westcott, and by various other members of the Anti-Vivisection Society, were simply deliberate falsehoods. Westcott was then given all the documents in my possession relating to the objects of the institute. This having been done, Dr. Ruffer told Westcott that to come as a spy into a man's office and give a false name was nothing short of telling a lie, and that he, Westcott, was a liar and an impostor. Westcott said he did not think so. On taking Westcott with uttering falsehoods at the meetings he addressed, Westcott said this was the reporters' fault, but immediately afterwards admitted that he himself had given his notes to the reporters. He then took a written lecture out of his pocket and began quoting passages from it, but Dr. Ruffer remarked that this was perfectly unnecessary, as he, Dr. Ruffer, already had a shorthand *verbatim* report, taken by two reporters, of everything that was said at one of the meetings addressed by Mr. Westcott.

"On Dr. Ruffer asking him to substantiate his statement that he had seen cultures thrown out of a window at the Institut Pasteur, he denied ever having said such a thing, and admitted he had never seen this done. When Dr. Ruffer charged him with having described as an eye-witness an experiment at the Institut Pasteur which had never been performed there, Westcott admitted that he had never seen any experiment whatever at the Institut Pasteur, but he had seen the experiment in 'another laboratory.' He did not volunteer the name of the laboratory nor the date of the experiment, but Dr. Ruffer pointed out that from the shorthand report he distinctly understood the supposed experiment had been done at the Institut Pasteur, and that he, Dr. Ruffer, had also in his possession the report of another of Mr. Westcott's speeches in which he described how he, Westcott, had seen over 500 animals inoculated at the Institut Pasteur, and that in many cases great pain was caused. Westcott again stated he had never seen a single experiment performed at the Institut Pasteur, and was then shown the door.

"GEO. COOPER, Assistant Secretary."

The cause must indeed be wretched that needs to be bolstered by methods such as these. We know some offices where such prying over a desk and documents would be visited by a vigorous application of shoe-toe to the brawny disc of the anti-vivisectionists' dorsal rotundity.

THE BOVRIL COMPANY PUNISH A CALUMNIATOR.

£1,000 DAMAGES AND COSTS.

IN an action before Lord Kincairney, raised by Bovril (Limited), London, against Joe Smicht, horsedealer and foreign agent, of 93, Waterloo-street, Glasgow, and Greenbank, East Kilbride, the pursuers concluded for £1,000 damages, and decrees was granted, in absence, for that amount and also for expenses in terms of the conclusions of the summons. The pursuers stated that they were a company with a paid-up capital of £145,000, Lord Playfair being chairman of directors, that they carried on an extensive business as food specialists and as the manufacturers of the fluid beef preparation known as "Bovril;" that "Bovril" is the guaranteed product of prime ox beef, manufactured exclusively from the flesh of first-class oxen in the very best condition; and that it is manufactured under the constant direct supervision of Dr. Harkness, Government analyst, Somerset House, London. They alleged that since the formation of the company in 1889 there had been generally a large and steady increase in the amount of "Bovril" sold, but that in certain districts there had been, during the last two years, a decrease in their sales, and that this decrease was owing to a belief, which they were surprised to find existed in those districts, that "Bovril" is manufactured from the flesh of horses. In the course of inquiries instituted by the pursuers, they alleged that they had discovered that the defender, who is a foreign agent in Glasgow, had regularly and systematically since the beginning of 1892 represented himself as being the agent employed by the Bovril Company to buy old horses, and solicited horse-dealers and others to sell him such horses for the purpose of being manufactured into "Bovril," and that he had regularly bought horses which he stated were purchased for that purpose. The pursuers characterised these statements as false and calumnious, and they alleged and offered to prove that they were so, and that they had no connection with the defender, but that in reality the horses purchased by the defender were shipped by him to the Continent. The result of those false and calumnious statements made by the defender was, the pursuers alleged, that many persons, both among those to whom the defender made the statements and others to whom the report had spread, ceased to use "Bovril," and advised their friends not to use it. The damage which the pursuers had thus sustained through the wrongous actings of the defender, they said, was moderately estimated at £1,000.

LIVERPOOL CITY ANALYST.

IN consequence of the request of Dr. Campbell Brown, public analyst, that a second analyst may be appointed to act during his absence from illness or other cause, and to work under his directions, the Health Committee has passed a resolution that Walter Collingwood Williams, bachelor of science, be appointed, subject to the approval of the Local Government Board, under the Sale of Food and Drugs Act, 1875, an analyst of all articles of food and drugs sold within the city of Liverpool, that he be paid in full, for the remuneration of his services as such analyst, a sum after the rate of £50 per annum. It was also resolved to appoint a district agricultural analyst for the city, and that he receive by way of remuneration the fees paid for analyses.

THE CULTIVATION OF SUGAR-BEET IN ENGLAND.

WITH the rotation of the seasons we are once more confronted with the results which have been obtained in connection with the cultivation of beetroot in Great Britain. Though the facts that the figures of the annual returns reveal are as satisfactory as ever, we are reminded that the agricultural outlook is by no means as favourable. We do not intend to enter here into the ways and means of improving matters for the agriculturist, but these experiments open up another issue. The conditions of working in the last five years during which these experiments have been prosecuted have been sufficiently variable to subject the trials to adverse as well as favourable circumstances. The last year is a case in point, as the spring was exceptionally dry. The results, nevertheless, are good. Again, the growing of sugar-beet is not confined to any particular kind of soil, and many are the manurial mixtures which have been successfully applied. The best crop has been obtained on sandy loam, manured with eight loads of farmyard manure, the previous crop having been wheat. The next best crop was yielded by a light warp soil, dressed with 3cwt. of sodium nitrate. The average of 22 trials made in England shows a yield of close on 19.5 tons of roots per acre, which took 174 days vegetating, and contained 15.16 parts of sugar in a hundred parts of juice. Such an average is undoubtedly good, considering the unseasonable weather encountered.

And now, after having briefly pointed out the fact that, year in and year out, come good or bad, the cultivation of sugar-beets can be conducted as successfully in this country as on the continent, there still remains the difficulty that as yet there are no means of turning the crop to any practical account, as a works for the extraction of beet-sugar does not exist. The enhanced value of land devoted to sugar-beet cultivation is clearly shown by the fact that on the continent sugar lands are now worth from £80 to £160 per acre. It seems a pity that nothing is likely to be done to give a fair trial to the contention that beet-sugar can be as successfully extracted on a commercial scale in England as on the continent, when the good which owners would assuredly do to their property, and the risks of extracting at a profit can be easily, not to say safely, calculated from the information afforded by investigations of five years' duration. Yet this is the position in which the present year finds us, while the crops have to be employed in the feeding of live stock. Naturally, landed proprietors are looked to for assistance in raising the capital for a trial; but they do not seem disposed to do anything in the way of co-operation—they seldom are. The venture would certainly be safer than many another tempting opportunity of coining money in exploiting some land, somewhere, for some mineral, generally to be found, but yet at present the venture goes a-begging.—*The Chemical Trade Journal*.

IS BORIC ACID INJURIOUS?

DR. L. TORTCHINSKY, in the *Gazette Hebdomadaire de Bordeaux*, says he used boric acid in two hundred and forty cases of typhoid fever in the course of an epidemic, and reports excellent results; only nine patients died, and they succumbed during the period of convalescence because they got out of bed too soon, or committed errors in diet. The two hundred and thirty-one other patients made a rapid and complete recovery. In all the cases the patients were given a dose of castor oil with from five to ten drops of oil of turpentine. After this mixture had operated, the administration of boric acid was begun, the remedy being given internally, either in powder or in solution, in doses ranging from twelve to fifteen grains for an adult, three or four times a day. When there was bronchitis the boric acid was associated with expectorants and with hydrochloric acid. As a general rule, at the end of from three to five days the fever and the diarrhoea underwent a noteworthy diminution, the tympanites disappeared, the dejecta lost their odour and became normal in appearance, the urine became abundant and in every way normal, the tongue and skin grew moist, and the general condition was good. As soon as the amelioration was well marked, the use of the acid was discontinued, and tonics were ordered. Under the influence of this treatment the disease followed a favourable course, its duration was somewhat diminished, and complications were very rare. The most decided effects were obtained in cases treated early. The author has found that the effects of the boric acid treatment may be increased by combining with that drug small doses of acetanilide, quinine, naphthaline, or salol. The mixture with quinine is especially useful in the last stages of the fever, when there are ataxia, delirium, and other cerebral symptoms; it is useful also in cases of relapse. The author has never observed any harmful effect from the use of boric acid. He has also produced satisfactory results with this acid in the treatment of the summer diarrhoea of children.

EXCESS WATER IN BUTTER—CASE WITHDRAWN.

AT Keighley Police-court on February 16th, Mr. Randerson, County Council inspector, said he had been instructed by the West Riding solicitor to withdraw the summons against Wilfred McDonnell, grocer, Keighley, for alleged sale of butter adulterated with water, after recent decisions in Manchester.

IN a recent report, J. Sterling Morton, United States Secretary of Agriculture, recommends that whenever food preservatives are used in the preparation of canned goods, the fact should be stated on the can, leaving the responsibility of consumption to rest upon the purchaser.

THE DANGERS OF SALICYLIC ACID.

THE *Schweizerische Wochenschrift für Pharmacie* has the following concerning the dangers attending the external use of salicylic acid:—

One of our friends, a country practitioner, was suffering recently from sciatica, and conceived the idea of experimenting upon himself with an alcoholic solution of salicylic acid, which he had seen recommended as a topical application in rheumatism. He applied compressed web with the solution and renewed them several times during the evening. As he started to get to bed he was seized with a feeling of malaise, which was accompanied by intense itching over the body, ringing in the ears, and finally the body began to swell. He lost consciousness, and his servants and others around him thought him dead. A colleague, called in great haste, found the body enormously inflated (the skin seemed as though it had blown full of air), and the patient was in a state of complete coma. He had absorbed by the skin an enormous dose of salicylic acid. After the use of various revulsives and active evacuates, consciousness returned to the patient, and the swelling gradually disappeared. It was several days, however, before he was able to resume his daily avocations.

Pomades containing salicylic acid are also not free from serious inconveniences, not to say dangers, as we have had occasion to find out in several instances. In a number of cases the first application of salicylated pomade produced such discomfort, swelling and inflammation that the patients could not be induced to continue the use of the medicament. The lesson to be learned from these cases by pharmacists is never to dispense salicylated ointments, solutions, etc., without the prescription of a physician.

COTTONSEED OIL.

It is about forty years since cottonseed oil first appeared upon the commercial markets. In 1892 there were crushed some 1,250,000 tons of cottonseed, from which were obtained about 1,000,000 barrels of oil. It is interesting, says the *Commercial Bulletin*, to note the channels of consumption for this large and increasing industry. It is estimated that one-half of it is used for making lard. At Chicago, 300,000 barrels were used, and at St. Louis, Kansas City, and Omaha about 200,000. There are 200,000 to 300,000 barrels exported to Rotterdam for use in butter, 50,000 to 100,000 barrels are used by soap makers for toilet soaps, and 20,000 barrels go to the coast of Maine to pack sardines in. Considerable quantities are also exported to Marseilles, Trieste and many points on the Mediterranean coast for mixing with olive oil. There is a strong prejudice against cottonseed oil for food purposes in this country, but it is possible that in time this may be overcome. Already in certain sections it is growing in favour, noticeably in Texas and the New England States, where the oil in its pure state is used for cooking, and is recommended by physicians as a remedy for indigestion. There is no doubt but that there is a general growing demand for the oil for table use and culinary purposes. Its introduction for these uses is only of recent date. It has undoubtedly come to stay, and the time may not be far distant when it will equal, if not excel, its competitors in popularity. It is already extensively used in paints, possessing in a degree the properties of linseed oil. It is a chemical possibility to obtain from cottonseed oil linseed oil; but as yet no practical method has been devised. To the paint and varnish manufacturers this is a very important possibility, and one to the solution of which they are looking forward. As an adulterant in olive oil, for which very large quantities are used, it is difficult to detect, owing to a special refining process it undergoes which conceals its presence.

BELFAST AND THE FOOD AND DRUGS ACT.

THE quarterly report of Professor Hodges, M.D., F.I.C., the public analyst for the city of Belfast, says: Since my last quarterly report 159 samples of food, drink, and drugs have been submitted to me for analysis. The samples consisted of 83 of sweet milk, 11 of butter milk, 19 of butter, 12 of whisky, 6 of vinegar, 7 of pepper, 4 of ginger, 2 of rum, 4 of tea, 7 of mustard, 2 of Epsom salts, 1 of Glauber salts, and 1 disinfecting liquid. Of the samples examined 15 were found adulterated, viz., 5 samples of butter, 2 of sweet milk, 2 of butter milk, 5 of whisky, and 1 of rum.

ADULTERATED IPECAC.

DURING the past month the customs regulations at New York respecting the inspection of drugs have been rigidly enforced. The last drug to come under the notice of the customs officials is crude ipecac. Recently a considerable quantity of spurious and stemmy root has been rejected. A reporter for the *Commercial Bulletin* questioned several importers and learned that competition has become so keen that in order to conceal foreign substances some firms powder the roots. If the root did not contain so many properties valuable for medicinal purposes this grinding of stems, roots and grass together would not matter. But some of this ipecac which has been rejected would not contain the desired power in the minute doses prescribed by a doctor.

Dr. Jewitt said: "This ipecac was absolutely unfit for commercial purposes. A great quantity of stem was in these importations, and if the dead matter was not removed before the drug was prepared for medicinal purposes, the real properties would be materially reduced and practically unfit for use. In regard to Carthagenia ipecac, it is absolutely unfit for medical purposes, and has always been rejected by the United States drug inspectors. I know that this ipecac is worthless, and besides, the packing is faulty, the root old and mixed with long stems."

A WRINKLE FOR OILMEN.

THE *American Paint, Oil, and Drug Review* says: "There is abundant proof that irregular packages are purposely made to deceive the gauge, the barrels ends often having pieces of thick wood placed centrally inside of each, in the place, of course, least likely of detection, but which would occupy sufficient space on the inside of a barrel to make a deficiency between the real and fraudulent gauge. Different makers of packages resort in other ways to extend this imposition, and buyers are justified in feeling indignant, and concerted action should be taken to stop the illegitimate practice."

As a proof of the prevalence of this false gauging or rather crooked practice of making containers, we have in mind an investigation made by the Savannah Board of Trade. An examination was made by two barrels each of five different leading makes, which they designed by the numbers 1, 2, 3, 4, and 5, all of which were made in such a way that the gauge rod credited them with containing from over one-and-a-half to two gallons of turpentine more than they actually did contain, as shown by the water gauge afterwards made. We give below the exact official figures.

Gauge Rod Measure.			Water Gauge by Sealed Measure.
No. 1	...	53 gallons.	51 gallons, 1 pint.
No. 1	...	52½ gallons.	51½ gallons, 1 pint.
No. 2	...	51 gallons.	50 gallons, ¾ pints.
No. 2	...	53 gallons.	51 gallons, ¾ pints.
No. 3	...	50½ gallons.	49 gallons.
No. 3	...	51 gallons.	49½ gallons.
No. 4	...	53 gallons.	52 gallons, 1½ qts.
No. 4	...	55 gallons.	53 gallons, 2½ pints.
No. 5	...	54 gallons.	53 gallons, 1 qt.
No. 5	...	53½ gallons.	52 gallons, 2½ pints.

"A more recent investigation made by a well-known Boston dealer disclosed that of ten barrels of turpentine the Boston gauge on first barrel was 52½ gallons, actual gauge by sealed measure; same barrel filled with water, 50½ gallons was all that it would contain. Barrel No. 2, Boston gauge 53½ gallons, of water measured in carefully with a sealed measure was 50¾ gallons."

It would be interesting to know if this swindling is confined to our Yankee brethren, and if similar practices are perpetrated at the expense of English oil-dealers.

LANARK MIDDLEWARD COUNTY COUNCIL AND PUBLIC ANALYST.

At the last meeting Mr. Lambie moved that the meeting recommend to the County Council that the Middle Ward be authorised to appoint a public analyst. The number of cases which came before the committee at a recent meeting, he remarked, was sufficient justification for the step he proposed. Mr. Templeton seconded, and the motion was adopted.

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THE DANGERS OF INFECTION BY PERSONAL CONTACT WITH DISEASES NOT REGARDED AS ACTIVELY CONTAGIOUS OR INFECTIOUS.

By J. W. IRWIN, M. D., LOUISVILLE, KY.

As no pretence will be made for any claim to priority for the subject of the remarks I have to make, I shall offer no apology for bringing to your notice a few of the facts on "the dangers of infection by personal contact with diseases not regarded as actively contagious or infectious." Nevertheless, I cannot hope to escape criticism at first sight by those who may believe that the discussion of this subject is untimely, in that special reference will be made to the double occupancy of beds, which has been the rule observed by our ancestors from time immemorial, and it may be thought good enough for us now.

I am not unprepared to hear any reasonable amount of criticism, and I shall take refuge against it in the light of an advanced state of observation, which has given us more accurate knowledge and has replaced sophism by logical conclusions which physiological facts have shown to be more in accord with the laws of self-preservation.

For many years there have been certain diseases recognised as not contagious or infectious, and yet persons who were known to be in good health before coming in contact with those afflicted by them, often became their victims. The *materies morbi*, which were at work causing many diseases, were accounted for hypothetically only, until Koch announced his discovery of the germ of consumption. Then it was that important light was thrown upon the spread of diseases which had hitherto been shrouded in mystery. Since Koch's important discovery of the tubercle bacillus, the science of mycology has received new impetus, and it is making rapid progress in the search for truths.

The danger of certain insidious diseases being transmitted by contagion or infection, before Koch's discovery, was too little regarded by physicians. Now, the importance of prevention is being fully appreciated, and it is receiving careful consideration at the hands of physicians and others whose duty it is to protect the health of those whose lives are entrusted to them.

Another important and more recent discovery has been found in the fact that there are certain disease germs which do not live in the normal air, and others that do live and thrive in it. Whether or not this peculiarity applies to any of the germs found in the diseases of the air passages, I have seen no mention made of it.

Now, let us consider the character of the excretions and exhalations which are present in every person in a state of health, and we find certain poisonous ingredients which render their immediate atmosphere impure. When these poisonous products are inhaled they tend to weaken vitality and render the recipient more susceptible to the action of disease germs, while had these products been first subjected to the free air, their properties would have been changed and made inert.

In those suffering from disease, more poisonous products are present in their immediate surroundings, and in addition there are disease germs awaiting a suitable soil in which to grow and multiply.

There are many diseases of the air passages, indeed nearly all of those affecting the mucous membranes, that are now recognised as contagious or infectious, as well as the more insidious disorders which affect the lungs. Contact with these diseases render the subjects more liable to be infected by them. Children sleeping together in the same bed often convey the seeds of disease to each other through the respired air, which a distance of a few feet from each other might have prevented.

Imagine, by way of illustration, two persons occupying the same bed, one of which is sick and the other is well; the well one is inhaling the breath as it leaves the nostrils of the sick, warm and laden with its millions of disease germs, and it will be readily understood how even insidious diseases not actively contagious or infectious may be transmitted to others. There are few physicians who have not been brought face to face with the sad scene of a house deprived of its most useful member for the want of precaution against those insidious germs which were conveyed from the lips or in the respired air from the lungs of a bedfellow who was the victim of consumption. It is, therefore, no longer any surprise to find that the husband or wife has become the subject of consumption after sleeping in the bed together, one of whom being a victim to that insidious malady which knows no foe.

The remedy of this evil suggests itself, and it has already received some recognition abroad. Do away with the use of double beds, and replace them by single ones furnished with separate clothing. The same room may be occupied by the husband and wife, and the beds may be placed near enough to each other for companionship. This arrangement of the beds will cause the poisonous products of the exhalation of persons to become diluted and changed by the air, and rendered less injurious to health when again inhaled. The advantages to be derived from the use of single beds will become apparent for reasons other than for the prevention of the disease. The arrangement will, in most cases, tend to preserve the sense of delicacy which closer contact sometimes dulls. Again, when persons are fatigued from overwork or mental worry, which give rise to insomnia, and cause them to become restless and roll about, or, when necessity compels them to leave the bed, the companion will not be awakened or otherwise disturbed. There

are many other disagreeable features which annoy sensitive and wakeful persons who occupy together double beds, such as heavy breathing, snoring, and other strange respiratory sounds, which distance would render much more endurable. Late or irregular hours on the part of a companion for retiring, often awaken the sleeper, and his sleep is over for that night.

Many other illustrations might be given to show the injurious effect of persons sleeping together in double beds.

We live in an age of reason and observation, and as guardians of the public health, true to our trusts, it is our duty to consider matters of such vital importance as I have referred to in this short essay.—*Medical and Surgical Report, Philadelphia, February 27th.*

POTASSIUM PERMANGANATE AS AN ANTIDOTE TO MORPHINE.

DR. MOOR is receiving a rough heckling in some of the American journals with respect to his alleged discovery. The *Pharmaceutical Era* says:—

"A certain Dr. William Moor, of New York, has recently gained considerable cheap notoriety by swallowing a poisonous dose of morphine, following it immediately with a solution of potassium permanganate as an antidote. As he experienced no ill-effects from the experiments, he has been joined by the newspapers in claiming that permanganate of potassium is sure to prove of immense service in cases of morphine poisoning, and that it will undoubtedly be employed in the treatment of the morphine habit. This is but another sample of newspaper science, but one that may do more than the usual amount of harm. Were the newspapers to be believed, Dr. Moor should be looked upon as a great benefactor of the human race, and his discovery an inestimable boon to mankind. But in truth, there's nothing in it. Potassium permanganate is one of the most easily decomposable of substances, and if it is to destroy the toxic power of morphine it must be administered almost simultaneously with it. Dr. Moor says it will decompose a morphine salt several hundred times quicker than it will decompose albumen, and that it exercises this power of selection in the stomach. Perhaps so, but its action on albumen is so rapid that a grain or two of morphine would have to select it very promptly to effect decomposition. The gases and juices of the stomach and the food which may be present would have a rather discouraging effect upon poor permanganate in its search for morphine, its affinity. And suppose it did not find morphine, what if it should attack the walls of the stomach in its exasperation of disappointment? We confess we are out-and-out sceptics in this matter. If the permanganate gets a chance at the morphine before anything else is offered it, both would emerge from the fray in a very battered condition. But give morphine a few minutes' start, and let it hide itself in the circulation, and permanganate wouldn't have a ghost of a show. The proposition to administer it hypodermatically as an antidote in morphine poisoning is ridiculous. The blood itself would rebel against such intrusion and would annihilate permanganate in short order. Dr. Moor tells the reporter that in case of poisoning with opium preparations other than morphine salts, the antidote should be acidulated with vinegar. Text-books and experience show that acetic acid especially decomposes permanganate, under proper conditions, and it is reasonable to expect decomposition here. We do not belittle the value of permanganate as a morphine antidote in cases where it can get a fair crack at the morphine, but in ninety-nine instances in a hundred its administration would be worse than useless, for the morphine would be well beyond its influence, and there would be grave reason to fear its corrosive action on the stomach itself. It is unfortunate that the matter has been brought to public attention, for even were the application of permanganate proven a valuable discovery, as claimed, this use of it could be of practical service only in the hands of the well-qualified physician, and is not to be entrusted to the layman."

American medical men have been experimenting, and the same journal records the following:—

"Dr. William Frye, of Sedalia, Mo., claims to have been experimenting with permanganate of potash, heralded as an antidote for morphine poisoning. He reports that a dog was given five hypodermatic injections of one and a-half grains of morphine at intervals of about ten minutes. This was equivalent to fifteen grains introduced into the stomach. In about two and a-half hours the dog was dead to all appearances. The attempt to restore it to life was then made. Three hypodermatic injections of permanganate of potash of one grain each, in a dram of water, were given ten minutes apart. The first injection caused the dog in about fifteen minutes to prick up his ears when spoken to. At the second he was able to wag his tail, and the third enabled him to walk around the room."

ANOTHER CONFECTIONER'S DELICACY.

A FEW weeks ago we told how sausage-rolls were made with red-ochre. Now, according to *Figaro*, a new and successful industry has been discovered in the selling of rabbit skins to confectioners for the making of calves' foot jelly. The hair is taken off and used for stuffing of couches, manufacture of hats, etc., then the skin is subjected to certain processes until the oils are extracted. It is said that over 5,000,000 skins are annually imported into England from Melbourne alone.

UNRELIABILITY OF SMALL FILTERS AND THE DANGER OF WELL WATER.

BY PROFESSOR R. KOCH.

IN order to complete the discussion of the relations of water filtration to cholera, I must now, after this discussion of filtration as it is carried out in the great water-works, shortly consider filtration, as well artificial as natural, of water in small quantities. For domestic filtration, *i.e.*, for the use of a family or of one house, there are some filters of a most varied construction at our disposal. Of these there are not many which can keep back micro-organisms, and therefore infectious matter, from the water, and those which can do so—*e.g.*, those made of silicious marl, aluminous clay, asbestos and celluloid—remain only a few days impermeable to germs, and very soon fall off as regards the quantity of water they supply, and require a very careful handling. I am not aware of any small filters which suffice for practical wants for any length of time, and I should not advise depending upon small filters in times of cholera. Far better are the results of natural filtration. Rain water, when it sinks into the ground and ultimately becomes subsoil water, passes through far thicker layers and with far less rapidity than river water when passing by artificial filtration through sand filters. If the soil is only sufficiently granulated, we have in soil filtration a much more perfect process than is at our disposal in artificial filtration. As a rule, the soil is of a material much more finely granulated than the comparatively coarse-grained sand of the filter, and it is fair to expect that the subsoil water, after passing sufficiently thick layers of this finely granulated soil, will be either very poor in micro-organisms or quite free from them. This is confirmed by the investigations of C. Fraenkel, who has shown that subsoil water, even in a soil which has been much and for a long period contaminated, as in the case in Berlin, is quite free from germs. In other places the same results have followed from investigations made on this point. We have, therefore, no reason to keep out of consumption the subsoil water, which can be found nearly everywhere. On the contrary, we cannot find a better filtered water and one more protected against infection. The only difficulty is to bring this perfectly purified water into consumption without its being later on again contaminated and infected. In this respect great errors are still most inexplicably made everywhere.

If the subsoil water is raised by means of an iron conduit pipe, the possibility of contamination is avoided. The soil is so close to the pipe that no real disturbance of the filtering layers of the soil are produced by the boring. All liquids, even those most strongly contaminated, must, before reaching the depth from which the water is raised, pass through thick and efficient filtering layers, by which they are rendered quite absolutely free from infectious matters. Especially is this the case if the boring goes through an upper impermeable layer into deeper sand or gravel layers containing the water. Water coming from such depths will certainly nearly always contain some iron, but this is, in the case of a single pump, as also in the case of large filters, no reason for rejecting the water. It will only be necessary to free the water from iron according to the methods above described, *i.e.*, by exposure to air and filtration, in order to obtain quite excellent water, in no way inferior to the best spring water. For this purpose the method given by Pietke is to be recommended, as it has proved itself to be excellent at Hamburg in the case of a number of pumps giving water containing iron. The most rational way of obtaining subsoil water is undoubtedly by the use of iron pumps. There is, it is true, the objection against it that the pumps gradually bring up less and less water. But it has been observed that this has nearly always been due to the fact that the metal sieve, which is intended to protect the pipe at the lower punctured end against sand, has been stopped by mud and become incrustated. But it will be easy to find a means of avoiding this by giving such a construction to the lower end of the pipe as to enable the metal sieve when stopped up to be removed and to put a fresh one in its place. Iron pumps are unfortunately still too little used. Almost everywhere the subsoil water is obtained in the old-fashioned but most irrational system of wells. The construction of the well is such that, from underneath—*i.e.*, from the subsoil water, if the bottom of the well is deep enough and is in good filtering soil—only good filtered water can come into the well. But from above the well is nearly always exposed to very serious contamination. Very often the wells are quite open or insufficiently covered; but even if they are covered above by masonry, or by iron plates, nearly always in the uppermost layers of the soil surrounding the well, which in summer become quite dry and in winter are exposed to frost, there are cracks and fissures which allow unfiltered water coming from these unfiltered layers to leak into the well. Even masonry or cement is, when subject to these influences, so cracked and fissured as to be unable to prevent the water flowing from the surface of the soil to reach the well. But this very water can be very badly contaminated, for the water of the well is used at the well for laundry purposes and for the cleansing of domestic utensils. Contaminated in this way, and possibly infected, it finds its way through the cracks and fissures of the covering back into the well. Besides, the wells are generally situated in the lowest part of a district. As a result they receive the filth of over-full dung heaps, gutters, etc.; and often the rain washes toward the well filth from

human dwellings, even if situated at a considerable distance. The fact that epidemics having their source in well water are generally observed to occur after a heavy rainfall is to be ascribed to the above fact. A proof that even cholera infection can have its source in a well contaminated in such a manner is to be found in the case of a well in the neighbourhood of Altona, into which filth had been allowed to pass from the surface. As to this case, I shall have to report in another paper.

Wells, constructed no matter how, should not be tolerated in future, as they are exposed to contaminations of this character, even if there is only suspicion that such contamination might take place. It will certainly not be easy to arrange that wells already in existence, even if badly constructed and dangerously situated, should be given up; but that is not always necessary. It will be comparatively easy in most cases so to alter the construction of the well as to remove all danger of contamination from above. It is only necessary to give to the well the same protection, or approximately the same protection, against contaminating percolations by means of filtering layers of soil such as exist in the case of a simple pump. To achieve this, one should proceed by filling the well up to the highest water point with gravel, and over the gravel with sand to the very top. Here it is, of course, assumed that the well is already provided with a iron pipe, or, if this is not the case, that it will be provided with one before the gravel and sand are put in. In this way the well is turned into a pump, with the advantage over other ordinary pumps that its lower ends dip into a layer which gives no resistance to the subsoil water. If it is proposed to keep the water supply of the well quantitatively intact in order that, for instance, for purposes of extinguishing fires, a certain quantity of water should be at hand, there should then be erected above the highest point reached by the well water a construction of masonry or iron capable of lifting the protecting sand covering. But the last should never be less than two metres deep. It is also to be recommended that the pump should not be erected immediately over the well, but some distance from it, and that it should be put into communication with the well by a lead pipe. This would prevent the water of the well, which, when used for washing and other domestic purposes, becomes foul, from leaking into the soil around. Wells protected in this or similar methods, by good filtering layers, give the same protection against the infection of water as is given by the sand filtration of the great waterworks. In fact, they really give a greater protection, for they are not exposed to the many disturbances in the process of filtration referred to previously, and are also not affected by frost. So much attention is now being given to perfecting as much as possible the water supply of the great waterworks, that it is important not to lose sight of the domestic water supply by pumps and wells. By improving the wells in the manner explained above, the spread of cholera, insofar as is due to water, can be restricted to a great extent. It is just in this respect that a great deal can yet be done.

THE CHELSEA HOSPITAL SCANDAL.

THE following *bonnes-bouches* from the reply of the Chelsea Hospital authorities to Dr. Louis Parkes' exposure will astonish sanitary experts:—

"We do not for one moment admit the right of any medical officer of health, however distinguished in his own speciality, to set himself up as a judge of the operative work of this or any other hospital in his district. We venture to submit that to do so would be to set up a most dangerous precedent.

We believe this is the first instance where any medical officer of health has, in a statement made professedly as to the insanitary condition of a hospital, taken occasion to make an attack upon the entire medical staff, reflecting upon their professional probity and skill. It is needless to say that had these reflections been directed against any single member of the staff, Dr. Parkes would have been proceeded against for libel and defamation of professional character, from which even his official position would not protect him."

These be "grave words," but are they not a little foolish and beside the question? What the public want to know is whether Dr. Parkes' statement is true or otherwise. They do not want childish complaints about a medical officer of health's interference.

Three Highest Awards, Chicago, 1893.

DISINFECT
WITH
SANITAS
FLUIDS, OIL, POWDER, and SOAPS,
AND
KINGZETT'S PATENT SULPHUR CANDLES.
Pamphlet Sent Free.
SANITAS CO., LIM., BETHNAL GREEN, LONDON E.

TWO MONTHS' HARD FOR A "SLINK" MEAT BUTCHER.

At Burslem police-court, on February 27th, before Mr. H. Wright (stipendiary)—Herbert Clarkson, butcher, North Road, Burslem, was charged with exposing for sale, in the Burslem market, meat which was unsound, and unfit for human food. Mr. A. Ellis, town clerk, prosecuted on behalf of the Sanitary Authority, and Mr. Ashmall appeared for the defence. Evidence was adduced to show that on the 17th ult. the defendant exposed for sale on a stall in the Shambles a quantity of meat, which consisted of two hind quarters and one fore quarter of beef, and some offal. While the quarters were being cut up the meat was examined by the market and sanitary inspectors, who, believing it to be bad, called in the medical officer of health. The latter having condemned the meat, it was seized, and subsequently destroyed by order of a magistrate. It was alleged that the animal had suffered from some wasting disease, such as tuberculosis, and that the meat was diseased and unfit for food. Mr. Ashmall having addressed the court on behalf of the accused—though there was practically no defence—the Stipendiary said that such conduct as the defendant's was a source of great danger to the health of the inhabitants. It was admitted that defendant bore a bad name, and, as a matter of fact, had already been fined £5, £10, and £20, and had been sent to prison for a month, all for the same kind of offence. Fining was evidently of no use, and accepting all that had been said in the defendant's favour, he could not do less than commit him to prison for two months with hard labour.

THE LOCAL GOVERNMENT BOARD ON THE TAKING OF SAMPLES.

The following circular has been issued:—

"Local Government Board, Whitehall, S.W.,

February 26th, 1894.

"Sir,—I am directed by the Local Government Board to state that they have received from the Commissioners of Inland Revenue a communication with reference to the portions of samples forwarded to the chemical officers of their department, under section 22 of the Sale of Food and Drugs Act, 1875, from which it appears that in some instances the quantities have been so small as to cause difficulties in the operations of analysis; that in others the packing has been defective; and that in certain instances, in the case of perishable articles, there has been what has seemed an unnecessarily long interval between the original purchase and the receipt of the sample at Somerset House.

"The insufficiency referred to is doubtless generally due to the smallness of the sample purchased under section 13 of the Act, but also, occasionally, to the fact that the parts into which, under section 14, the sample is divided are not made equal.

"The chemical officers of the Inland Revenue suggest that the following rules should be observed in this matter:—

"1. The quantities of the samples purchased under Section 13 should not be less, in the case of milk, than one pint; butter, three-quarters of a pound; lard, three-quarters of a pound; coffee, three-quarters of a pound; spirits, three-quarters of a pint.

"2. The division under section 14 should be made as nearly equal as possible, so that the portion reserved may be not less than one-third of the whole.

"3. The reserved portion of such samples as butter and lard should, as soon after purchase as possible, be placed, without paper (since paper acts as an absorbent), in a dry wide-mouthed stoppered bottle, or in an earthenware jar, securely corked so as to exclude the air.

"4. The bottle used for the reserved portion of milk should be of such capacity that the milk may nearly fill it. (The use of bottles much too large for the quantity is apt to result in such a churning, if the samples are sent by railway, as to cause the separation of the fat.)

"5. The corks should be new and sound.

"The Board request that the officers by whom samples are obtained for analysis may be instructed to have regard to these rules.

"I am also to suggest that the officers referred to should be impressed with the importance of securing the utmost promptitude, both as regards the transmission of samples to the public analysts immediately after purchase, and as regards the subsequent stages of the case where legal proceedings are taken.

"I am, Sir, your obedient servant,

(Signed) "HUGH OWEN, Secretary."

LINSEED OIL ADULTERATION.

THE extent to which linseed oil is adulterated, or sophisticated, we presume few customers realise; that the dealers do not all appreciate it is apparent from the amount of it they buy. We have recently had occasion to analyse some of the boiled oil sold to one of our friends (at a ridiculously low price under the market), and at shows up as follows:—

Raw linseed oil	...	...	parts 70
Turpentine japan	...	...	" 6
Neutral petroleum...	...	...	" 24

This is a fair specimen of the boiled oil sold by a very well-known oil concern. Other samples examined contain about the same ingredients, with a slight change in the proportions. Neutral oil is worth about eightpence per gallon.—Meyer Brothers' Druggist.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
 Powell's Balsam of Aniseed—Coughs and Bronchitis.
 Powell's Balsam of Aniseed—Coughs and Hoarseness.
 Powell's Balsam of Aniseed—Coughs and Lung Troubles.
 Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
 Powell's Balsam of Aniseed—Coughs.—Established 1824.
 Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
 Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
 Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
 Powell's Balsam of Aniseed—Coughs Relieved Instantly.
 Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
 Powell's Balsam of Aniseed—Coughs.—Trade Mark.
 Powell's Balsam of Aniseed—Lion, Net, and Mouse.
 Powell's Balsam of Aniseed—1s. 1½d., 2s. 3d.

THE SANITAS COMPANY, LIMITED,

held their seventeenth ordinary general meeting at the works, Bethnal Green, London, E., on Tuesday, the 27th ultimo. The sales effected during 1893 exceeded those for the previous year by about 15 per cent., and the directors' proposals with reference to the appropriation of profits were unanimously accepted. The sum of £1,524 12s. 7d. was placed to reserve, bringing the total amount of that fund up to £10,000, which therefore now amounts to 20 per cent. of the paid-up capital; and after writing off £750 from patents and goodwill account, a final dividend of 1s. per share was declared, with the interim dividend already paid, and a bonus of 1s. per share—all free of income tax—makes a total distribution for the year of 15 per cent. In course of some observations made by Mr. C. T. Kingzett, F.I.C., the managing director, reference was made to some new articles of manufacture which he had introduced during the past year, including the "Sanitas" Pocket Inhaler, "Sanitas" Soluble Disinfectant Blocks (for placing in the carts which are used for street-watering purposes), and his patent Sulphur Fumigating Candles. With reference to these latter, it may be remarked that hitherto there have been experienced both difficulty and danger in burning sulphur for fumigating purposes, but with these candles both objections are entirely overcome, the candles taking fire immediately that a light is applied to the ribbon or cone, with which the two forms of them are severally provided, and they continue burning until the whole of the sulphur is consumed. Kingzett's Sulphur Candles have already been adopted for use by a large number of Sanitary Authorities and Boards of Health in this country, and doubtless the continued success of the Sanitas Company is in no small measure attributable to the fact that from time to time new articles of utility to meet existing demands are added to the lists of its manufactures, all of which have been invented and introduced by Mr. Kingzett personally.

IS THE DRY CLOSET SYSTEM DANGEROUS?

A COMMITTEE appointed by the Iowa State Board of Health to investigate this subject reported that, in twenty-six replies to letters addressed to seventeen different cities, six were in favour of the system, fifteen considered it unsatisfactory, and five expressed no positive opinion. From its own investigations the committee condemns the system for the following reasons: The drying of the excreta and ventilation of the closets depend wholly upon the ventilation of the building—the uninterrupted and continuous flow of air in one direction. This, under all circumstances, was impossible, as adverse winds or even opening of a door may cause a reversal of the air current, there being no means of preventing back drafts. Neither does the so-called dry closet always remain dry, an objectionable feature. Another point against it is, the excreta is never subjected to any sufficient degree of heat to destroy possible disease germs when desiccation of the material in the vault occurs. In this way the desiccated material, when drawn up through the ventilation shaft, may become a source of contagion to the surrounding community, and even to the occupants of the building, by contaminating the air as it is drawn into the fresh air ducts, should it be infected by the microbes of typhoid fever, diphtheria, or other contagious diseases. The dry closet system, as it is now constructed, is not the best means of caring for excreta of school buildings when proper sewerage or other approved methods are obtainable.

FERTILISING AND FEEDING STUFF APPOINTMENTS.

THE Board of Agriculture has approved the appointment of Mr. J. Carter Bell, F.I.C., by the Chester County Council, as district analyst for Cheshire, under the new Fertiliser and Feeding Stuffs Act, 1893.

Mr. John Hunter, F.I.C., F.C.S., examiner in agricultural chemistry at Edinburgh University, has been appointed analyst to Banff county under the Fertiliser and Feeding Stuffs Act, 1893.

CAUTION!

AVOID LAGER BEERS CONTAINING INJURIOUS DRUGS.

THE
PILSENER LAGER BEER,
O. BRUSTER & CO.,

143a, HOLBORN, LONDON, E.C.,

Is guaranteed BREWED solely from
FINEST MALT and **HOPS**, and **FREE**
 from any **PRESERVATIVES** **WHATEVER.**

BOTTLING AGENCIES IN ALL PRINCIPAL TOWNS.

This Beer is **SPECIALLY RECOMMENDED TO**
THE MEDICAL PROFESSION, who may obtain
 Samples free on writing to above address.

THE STEARINE IN LARD CRUSADE.

At Southport, on March 5th, the Churchtown Industrial Co-operative Society (Limited) were summoned, at the instance of the Southport Corporation, for selling lard adulterated with 10 per cent. of foreign fat. The Town Clerk (Mr. J. Davies Williams) appeared for the prosecution and Mr. Edgar (Messrs. Boote and Edgar) defended. Inspector Kirkbride, in the employ of the Corporation, spoke of the purchase of half a pound of lard at the Linaker-street branch of the defendant society on January 26th. He paid 3½d. for it, divided it in the usual way, and sent one portion by Inspector Cadwell to the borough analyst. Cross-examined: He wrapped the samples in paper, not thinking it necessary to place them in tins or jars. Inspector Cadwell corroborated. William James Orsman, Gathurst, Wigan, public analyst for the borough of Southport, said he received a sample of lard on January 26th from the last witness, and, on analysing it, he found that it contained at least 10 per cent. of foreign fat. Cross-examined by Mr. Edgar: He had analysed seven or eight samples of lard sent to him by the Southport and other corporations, but he had made and analysed about forty or fifty lard mixtures. In some cases it would be difficult to say precisely what the foreign fat was, but in this case it was easy, it was beef stearine. Mr. Edgar: You are certain it was beef stearine?—Well, beef or mutton stearine. It was not cotton-seed oil?—No. Why didn't you say so in your certificate?—I did not think it was necessary. Do you consider the tests you have made enable you to trace beef stearine with absolute certainty?—Yes, with the assistance I have received from other people. What other people?—The literature on the subject. It is a test which has been largely written upon by certain eminent chemists. How long is it since you began to examine for beef stearine?—January of this year. And this particular test was made on January 26th?—Yes. Whose test do you use?—A test by a gentleman named Stock, of Durham. And are you aware that by that test you can find beef stearine in a piece of cast iron?—No, I am not. Is it not an absolutely fallacious test except in the hands of a man of the widest experience?—Possibly. And yet you mean to suggest that, starting these experiments in January, you have acquired sufficient ability and knowledge to use Stock's test with certainty?—Most certainly. Well, we shall see. By this process you can get an ether-washed product which you examine under a microscope?—Yes. What power did you use?—I could not say, it was a low power, one of the lowest. Have you any of the deposit here?—No, I did not consider that that was at all necessary. Pardon me—You might expect me to bring my laboratory soon. I am only expecting from you what other chemists do. [For the information of the magistrates, will you tell the magistrates the difference between beef stearine and lard stearine?—The crystals are altogether different; the beef stearine crystals are feathery and with needle-like points; in the lard-stearine crystals the angles are very much more obtuse. Have you ever tested American lard?—Well, the samples sent have been unaccompanied by any intimation as to their source of origin. I have not obtained samples of American lard for the purpose of self-instruction. This was the case for the prosecution. John Howard, store-keeper at the Churchtown Co-operative Stores, stated that on December 14th he received 40 firkins of Kilvert's pure lard in accordance with the invoice produced. He sent one 6½lb. firkin to the Linaker-street branch. John Bean, manager at the Linaker-street branch, said he received the firkin on January 18th, and sold a sample to Inspector Kirkbride on the 26th. The firkin bore Kilvert's trade mark and designation "pure lard." Nicholas Kilvert, one of the managing directors of Messrs. N. Kilvert and Sons (Limited), Withy-grove, Manchester, said he believed his firm had the largest trade in refined lard in the kingdom. They guaranteed all their lard to be pure, and on behalf of their customers fought any case which might arise. They themselves were the originators of the crusade against impure lard, and put the law in motion for the purposes of obtaining convictions. The Co-operative Wholesale Society were customers of theirs, and on December 13th they sent, on the order of the Wholesale Society, forty firkins of lard to the Churchtown Society. That lard contained nothing but the pure fat of the hog; it contained no beef stearine. Their express instructions were that no beef stearine should be added. They had the raw material examined before receiving it, to see that it was not adulterated; they took every possible precaution, and apart from that the lard underwent a severe examination by the licensed inspectors of the Board of Trade. They had never found that any oil or beef fat had been added. They had had to pay pretty heavily for educating the public analysts of the country as to the difference between beef and lard stearine. Cross-examined by Mr. Williams: No specific warranty was given with this consignment of lard to the Churchtown Society. They had to meet a prosecution at Mansfield in respect to lard made about the same time, the charge being that there was 5 per cent. of beef stearine, but the case was dismissed with costs. Re-examined: They had invariably been successful when defending their customers. The lard had been analysed by a number of eminent analytical chemists. If the gentleman sitting behind Mr. Edgar (Mr. Orsman) said they had admitted at Mansfield adding 3 per cent. of beef stearine, he should apply to that statement a word of three letters. They admitted nothing of the sort. They had a general warranty with the Co-operative Wholesale Society, and were prepared to fight that as a sufficient warranty when the necessity arose. Charles Hawley (Manchester manager for Messrs. Kilvert) said he had worked for them for about twenty years. He had instructions to add no beef stearine whatever to the lard. He was prepared to swear that the lard was pure and contained no beef stearine. Cross-examined by the Town Clerk: There was no beef stearine on the premises. They had no use for it at present. It had been used for stiffening purposes. Re-examined: The last lard containing beef stearine went out in November, but the instructions not to use it were given and acted upon in October. Frank Tait, analytical chemist, said he had analysed a sample of the lard for the presence of any foreign fat, and found that it was a perfectly pure lard. He used Bellfield's test, with the use of which he had had a large experience. Cross-examined by the Town Clerk: He had never used Stock's test, because he was perfectly satisfied with the results obtained by Bellfield's process. He should not regard 3 per cent. of beef stearine as necessary for pure lard; 10 per cent. would be a large amount. Stock's test was a recent one, but dated back before January last. Re-examined: Stock's test was not accepted by all chemists as a satisfactory one. Walter Collingwood Williams, joint analyst with Dr. Campbell Brown for the county of Lancaster, and assistant to Dr. Campbell Brown as analyst for the city of Liverpool, gave similar testimony, and said the sample of lard was perfectly pure. On that point he was quite satisfied. He should consider the certificate put in was in a very undesirable form; he had never seen one before where the nature of the foreign fat was not specified. He could find 2 per cent. of beef stearine, and should suspect the presence of 1 per cent. He had used Bellfield's test, Stock's test (although he did not consider it of any use), iodine absorption, and the nitrate of silver test. He should consider an experience gained from forty samples quite inadequate; he should think he had analysed between 1,000 and 2,000 samples of lard. Stock's process, properly interpreted, showed that this sample was quite pure. Cross-examined: He used Stock's process with a view to detecting any objections. His objections to that process were that it depended upon scientific and logical errors, and errors of manipulation. One of Stock's fallacies was a fixed melting-point, whereas lard had no fixed melting-point. Manchester and Liverpool were the two places where lard refining was chiefly carried on, and the analyst in those cities had far greater opportunities than analysts in other towns. Stock's process was

especially weak with regard to American lard, which was of a more oily nature than English lard. The Town Clerk asked, after this evidence, that the case might be adjourned so that the sample of lard might be analysed at Somerset House, the prosecution to bear the cost of the analysis. Mr. Edgar objected; and the magistrates, after a short retirement, dismissed the case with costs up to £5.

APPOINTMENT OF COUNTY ANALYST FOR DERBYSHIRE.—The Weights and Measures Committee of the Derbyshire County Council met on the 6th inst. for the purpose of appointing a county analyst. There were at the outset 45 applications, which were reduced to six prior to the Council meeting, when the final selection was made. Mr. John White, F.I.C., public analyst to the county borough of West Bromwich, received the appointment, Dr. Nicol, of Birmingham, being second.

A CURIOUS ANALYTICAL DIFFERENCE. GEORGE RICH, dealer, of the Limes, Brentwood-road, Romford, was summoned last week for selling to the Guardians of the Romford Union, milk containing 18 per cent. of added water, on February 12th. Inspector Willsmer produced the report of Mr. T. A. Pooley, public analyst, who certified that the milk contained 18 per cent. of added water. It further stated that the sample was abnormally rich in cream; in fact, more than 50 per cent. separated on the milk standing 24 hours. In a private note to Mr. Willsmer, Mr. Pooley said it could scarcely be said that the purchaser was prejudiced, and therefore he thought it was a case for a caution rather than for prosecution. In cross-examination by Mr. Atkinson (who appeared for the defendant), Mr. Willsmer said he considered the guardians were prejudiced, as the contract was for the supply of pure new milk. Mr. Atkinson called Mr. W. C. Young, public analyst for 20 years to the districts of Poplar and Whitechapel, and consulting chemist to the Lea Conservancy, who said he analysed the sample which was left with Mr. Rich, and found that it was genuine milk of very exceptionally rich quality. He was perfectly sure no water had been added to the milk. The Bench retired to consider the case. On their return, the Chairman said: "The Bench decide, as the evidence of experts in this case is so conflicting, to dismiss it."

MR. WILLIAM BROWN IS ONCE MORE PRESENTED AT COURT.

At Lambeth, on March 6th, William Brown, of South-grove, Bow, and Swan-place, Old Kent-road, was summoned by Inspector Edwards, on behalf of the Vestry of St. George-the-Martyr, Southwark, for selling milk from which 80 per cent. of the natural cream had been abstracted so as to injuriously affect its quality. Mr. Birt, solicitor, appeared in support of the summons; and Mr. Philcox, solicitor, defended. Evidence was given to the effect that at the instigation of Inspector Edwards a man named Niblett went to the defendant's stores in Swan-place and asked for a pennyworth of new milk. There were several men standing about, and one of them served the milk. When the inspector appeared upon the scene the man who served the milk called out, "You have got skim milk." The defence set up by Mr. Philcox was that the man from whom the milk was purchased was not in the defendant's service. It was the defendant's practice, Mr. Philcox said, to supply a number of men with either new or skim milk, as they preferred. It was an out-and-out sale to the men, who were at liberty to charge what price they liked for the milk. Evidence was given to this effect. Several previous convictions were proved against the defendant. Mr. Hopkins held the defendant to be liable, and ordered him to pay the full penalty, £20, and £3s. costs, distress, or two months' imprisonment.

ADULTERATED BUTTER.

At Brentford Petty Sessions, March 3rd, George Hearn, of Hanworth-road, Hounslow, was summoned for selling butter which, on analysis, was found to contain 70 per cent. of foreign fat. Edward Watkins, the assistant to Mr. Tyler, stated that on February 9th he went into the defendant's shop and asked for half a pound of butter. Defendant asked what price butter he wanted, and he said, "What price have you?" to which the defendant answered, "Four prices—1s. 4d., 1s. 2d., 1s., and 9d. margarine." He intimated that he would have half a pound of shilling butter, and on being supplied with it paid 6d. for it. In answer to the defendant the witness denied that he said, in answer to his question about the prices, that he had "ninepenny and shilling margarine, and fourteen and sixteen butter." Walter Tyler, the inspector, proved the receipt of the butter from the previous witness, and said that on returning to the shop with it and telling the defendant it had been purchased for analysis, the latter said it was not butter. Next to the pile from which the butter was taken there was another pile which was labelled "margarine." Defendant in answer to the summons said, when the inspector asked him the prices he replied that he had ninepenny and shilling margarine, and fourteen and sixteen butter. When the inspector entered the shop he said, "Mr. Tyler, you have got a mixture; it is butter and margarine." The magistrates fined the defendant 20s. and the costs of the Court. On his application they allowed him time for payment.

At Stratford Petty Sessions, on March 3rd, John Mantol, 33, Queen's-road West, Waltham-tow, was fined 10s. and costs, for selling a substance purporting to be butter, but which, on analysis, proved to be margarine; and C. Thomas, of 305, High-street, Leytonstone, was fined 20s. and costs for exposing for sale margarine which was not labelled.

THE ACTS IN IRELAND.

At Ennis on March 2nd Cornelius T. O'Brien was summoned by Sergeant John M'Hugh, inspector under the Food and Drugs Act, for selling milk adulterated with water. The inspector produced a report of the analysis, certifying that the sample contained 14 per cent. of water, and 14 parts of milk. Defendant: I don't want to impugn the statement. The Act is a very desirable one. What I suggest is the possibility of the water in the milk being caused by the rain. It was not likely that water would be added to such a small quantity as a pint of milk. I tested some of the milk by the lactometer and found that half a glass of water reduced it 6 degrees. The Chairman: The poor must be protected. We can't overlook a case like this. We fine you 10s.

UNJUST WEIGHTS AND SCALES.

SEARJEANT M'HUGH, ex-officio inspector under the Weights and Measures Act, summoned Michael Gilligan, Old Mill-street, whose wife keeps a butcher's shop, for having in his possession on February 7th four unjust weights and one unjust scale. The inspector stated the deficiencies. One 2lb. weight ½ oz. light; 1lb., one drachm; 8 oz., half a drachm; and 1 oz., one drachm. The scale required ½ oz. to balance in 2lbs. There was a second summons for having in his possession seven un-stamped weights, of which four were the light ones. There was no defence, and a fine of 10s. and costs was ruled in each case, with forfeiture of seal, the weights to be adjusted. Susan Cullinan was summoned for using in the sale of milk in the market one unjust and one un-stamped measure on February 8th. The inspector stated that the unjust measure was deficient half a glass in half a pint. They got those tin measures made, and don't mind to get them tested and stamped. Fined 5s.

FERMANAGH ANALYST'S REPORT.

THE public analyst for the county (Sir Charles Cameron) says:—The following articles were analysed—Rum, 2 specimens; gin, 1; whiskey, 11; vinegar, 12; butter 15; tincture of rhubarb, 1; milk, 14; total, 56. Of these articles, the following (all sent by Sergeant Sheridan) were adulterated:—Six specimens of vinegar, two of milk, one of tincture of rhubarb, and one of rum—10. The question—What is vinegar? has been before many police-courts in England for the last year, and in most of the cases the magistrates felt themselves unable to convict. The opinion of chemists is that vinegar is the product of the fermentation of malt or wine into the acetous stage; and although acetic acid is the principal constituent of vinegar, other matters are associated with it, some of which give a peculiar flavour to the vinegar. I certified that five of the vinegars submitted to me by Sergeant Sheridan were not what I considered should properly be termed vinegar. My opinion was confirmed as regards four of these vinegars by Somerset House Referee Chemist, who considered that the fifth sample was a distilled vinegar. That sample contained a greater amount of acetic acid than in my opinion was ever present in malt or wine vinegar. I certified that one of the vinegars was adulterated with sulphuric acid. As regards the milk, one specimen was adulterated with 15 per cent., and another with 17 per cent. of water. The tincture of rhubarb was deficient in spirit and extract. The butter sent to me contained no foreign fats, and did not contain more than 15 per cent. of water. This is creditable to the farmers of the county, and is a great contrast to the state of things in the Southern counties, from whence I received large numbers of butter specimens containing from 17 to 33 per cent. of water. The whiskey was free from adulterants, and of proper strength. The rum was adulterated with water. As to arrowroot, there are so many kinds of starch sold under that name that unless a particular kind, such as Bermuda, is asked for and not received, any starch might be sold under that name.

LEGAL.

In the Court of Queen's Bench, the following case was tried:—

HIETT, APPELLANT—WARD, RESPONDENT.

This was a milk adulteration case, the question, however, being not on the merits—which were concluded by the finding of the magistrates—but on a ground of some practical importance as to the mode of getting a sample of the commodity for the purpose of prosecution. As to this there are two different modes provided in the two Adulteration Acts, the original Act, the Act of 1875 (38 and 39 Vict., c. 63, s. 13), and the amending Act of 1879 (42 and 43 Vict., c. 30, s. 3). The first provides that any inspector may procure any sample of food, and if he suspects the same may submit it for analysis, but first notifying his intention to the seller or his agent, and giving him a portion to be sealed up, etc. The second Act provides that the inspector, etc., may procure at the place of delivery any sample of any milk, etc., in course of delivery, and if he suspects the same may have it analysed, and may thereupon take proceedings as if he had purchased from the seller under the principal Act. In the present case Hiett was a farmer near Swindon, and on the 21st September last one Douglas was about to deliver to a shopkeeper at Swindon, where milk was sold by retail, a churn of milk which came from Hiett. The respondent Ward, an inspector appointed by the Wilts County Council, stopped Douglas and demanded from him a sample of the milk. Douglas objected, and Ward then explained that he was liable to a penalty if he refused, and then the inspector bought and Douglas sold a pint of milk, for which the inspector paid. The inspector then, in the presence of Douglas, both having gone into the shop of the retailer, proceeded to divide the sample into three portions under the enactment in the first Act, giving one to Douglas and one to the county analyst. Douglas took the sample he had to Hiett, who, however, refused to receive it, saying that he had sold nothing to the inspector. The county analyst reported on the sealed sample he received, and gave a certificate which supported the charge in the summons and information—viz., that Hiett had by Douglas sold the milk, which contained 10 per cent. of added water, "to the prejudice of the purchaser," and the magistrates on the evidence found the charge proved, and no question arose on the merits. But objections were taken on the part of Hiett that there was no sale by him of the milk in question, as Douglas, the carrier, was not his agent to sell it, and that the summons was bad for stating that he was. The cases of "Harris v. Williams," 6 The Times Law Reports, and "Rouch v. Hall," Law Reports, 6 Q. B. D., were cited on the question whether the conditions of the enactment in the earlier Act applied. The magistrates found that Ward had no power to enforce a sale; that Douglas sold under compulsion; that the sale, if made, was without authority; and that Ward took the sample under the compulsory power, citing "Rouch v. Hall," 6 L.R., Q.B. 17. They convicted Hiett, but they left to the Court the questions whether he was rightly convicted; whether Ward was obliged to comply with the conditions in the 14th section of the first Act; and whether the statement in the summons of a sale by Douglas vitiated it.—Mr. Neville, for the appellant, urged that as the information and summons alleged a sale by Douglas and an adulteration "to the prejudice of the purchaser," it was essential to prove a purchase, and that as Douglas had no authority to sell, the case failed. [Mr. Justice Mathew: The inspector first demanded the sample and the carrier objected to give it.—Mr. Justice Collins: He had only authority to compel delivery of a sample under his compulsory power. Does it make any difference that having got it he paid for it?—Mr. Justice Mathew: He appealed to his authority as inspector, and only obtained the sample by that authority.]—Mr. Gore-Brown, for the respondent, pointed out that, even assuming any variance, it is clear that under Jervis's Act it would not affect the conviction, being a mere variance, and not "of the essence of the charge."—The Court were of this opinion, and dismissed the appeal.—Mr. Justice Mathew, in giving judgment, said it was at the utmost a mere variance in the form of the summons. No injustice had been done; there was no application for an adjournment. The magistrates clearly had jurisdiction to deal with the case, and the conviction must be upheld.—Mr. Justice Collins said he was of the same opinion.—Conviction accordingly affirmed and appeal dismissed.

CONDENSED SKIMMED MILK.

THE summonses against Herbert Wild, of 84, Ealing-road, Brentford; Thomas Rumsey, 37, New-road, Brentford; Frederick Hill, of 1, Walnut Tree-road, Brentford; and Henry Smith, of 320, High-street, Brentford, were again before the court on March 3rd. They were taken out at the instance of Inspector Tyler, for having sold condensed milk which was not of the nature and substance demanded. They were originally issued in December, 1892, in company with others, against Mr. Platt, but were adjourned pending an appeal by Mr. Platt, which has since been decided in his favour, the conviction of the Brentford Bench being quashed.—Mr. Tyler, the inspector, stated to the Bench the judgment of the court of appeal, and asked leave to withdraw the summonses. He had obtained the consent of the various parties named.—The Chairman asked the grounds on which the court of appeal quashed the conviction.—Mr. Tyler replied that because the label was a sufficient disclosure of the nature of the milk.—The request was granted.

COLMAN'S MUSTARD.

AT Oldbury, on March 6th, Walter Cooper was charged with selling mustard not of the quality demanded, on January 31st last. Police-inspector Ball stated that he visited the defendant's shop and asked for half a pound of mustard. Defendant asked if he wanted the tinned or loose mustard, to which witness replied that he wanted it loose. Defendant weighed the mustard from a canister, and witness then informed him that the sample was required for analysis. The certificate of Dr. Swete showed that the sample was adulterated with starch to the extent of at least 8 per cent. Witness said he asked for half a pound of mustard, and defendant did not tell him that he did not sell mustard alone at all. He simply asked witness whether he wanted the tinned or loose mustard.—Cross-examined by Mr. Clark: Sometimes the mustard was sold from a drawer, and sometimes it was kept in a canister. The sample supplied to him was loose, and was taken from one of Colman's tins. Mr. Clark explained that Colman's tins always bore labels setting forth that it was an admixture of pure mustard together with farina and choice condiments. The witness further pressed by Mr. Clark, said he knew if it came from one of Colman's tins it was an admixture. Later, however, he added that he did not know it was one of Colman's tins that the defendant served it from. Mr. Clark appealed to the Bench as to whether the witness did not say he did in the first instance. Witness said the tin had been opened before he was supplied from it, and in reply to Mr. Clark denied that he knew Colman's mustard was an admixture, but he adhered to his original statement that the sample was out of one of Colman's tins. He did not know that mustard was adulterated, and very seldom sold in a pure state. Mr. Clark said ninety-nine out of every hundred bought mustard mixed. Mr. Clark (to the witness): Do you study the reports issued by the Local Government Board? Witness: They are not sent to me to study. Mr. Clark here read an abstract from a printed statement to the effect that the Local Government Board favoured the admixture of mustard, and asked witness if he had never come across a statement of that kind. Witness: I cannot tell you sir. Mr. Clark: Have you ever read that that mixture of mustard is continued for the convenience rather than for the deception of people who desire, not merely mustard-seed, but a preparation of mustard for the table, as it seems to be admitted that pure mustard cannot be kept good without difficulty for any length of time? Witness: I cannot say that I have received any of those papers, but I have not been appointed long, and it is the first case of this kind I have had to deal with. Mr. Clark: I can understand it then if that is the case. The magistrate's clerk (to the witness): You asked the defendant to supply you with the mustard he was selling to other people; you did not ask for half a pound of pure mustard? Witness: No, sir, I did not; I asked for half a pound of mustard. The Bench at this stage stopped the case and dismissed the summons on the ground that the inspector did not ask to be supplied with pure mustard, but simply asked for mustard, and, understanding that he required the article usually sold as mustard, the defendant supplied him with it from a tin which bore a label to the effect that it contained a mixture other than pure mustard.

ANSWERS TO CORRESPONDENCE.

DR. MCMILLAN, Helvinbridge.—Number 1 sent you of meat extract analysis. No. 2 is out of print, but No. 3 is really the same article as No. 2 reprinted. Wyeth's Beef Juice will be dealt with shortly.

NOTICE TO READERS.

Back numbers of the Journal are now very scarce, and can only be supplied in future at 3d. per copy when over a month old. Vols. 1 and 2, including index, 20s. each. Vol. 3, 10s., with index. Index separate, 1s. each.

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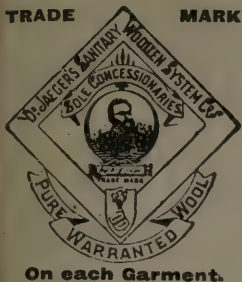
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SATURDAY, MARCH 24TH, 1894.

BLIND LEADERS OF THE BLIND.

In the kingdom of the blind the one-eyed man is king, and in that of our distressed agriculturists the one-eyed pseudo-scientist, or the one-eyed red-tapeist, or that worst of all nuisances the one-eyed political humbug, are all kings, and, as might naturally be expected, they have got their kingdoms into a pretty pickle. Take, for example, the *Fertilisers and Feeding Stuffs Bill*, upon which, along with others, the mighty intellects of Mr. Herbert Gardner, Minister for Agriculture, and of Mr. T. H. Elliott, Permanent Secretary to the Board of Agriculture, were exercised. We have never been able to understand why there should be special analyses at less than cost prices given to the farmer by the community whilst none such are offered to the grocer, the milk vendor, and other traders, who are liable to be imposed upon and be punished in addition for the faults of others, unless it is a dodge to catch agriculturists' votes, and for that reason, after our exposure months ago of the worthlessness of the Act, we have disdained to take it seriously, knowing that in a few months it must become a dead letter. We made public the ignorance of Mr. Gardner and the Board of Agriculture in regard to this measure long ago, and did not hesitate to flatly accuse its authors of not understanding the meaning of their own act. The mills of the gods grind slow, but they grind small, and they have ground the following from Mr. Elliott in answer to a letter from a firm of dealers who asked that red-tape genius the meaning of Clause 2, Section 2.

Board of Agriculture, 4, Whitehall-place, London, S.W.

January 11th, 1894.

Gentlemen,—I am directed by the Board of Agriculture to advert to your letter of the 3rd inst., and to state that, having regard to the position of the Board under the 7th section of the *Fertilisers and Feeding Stuffs Act, 1893*, they think it undesirable to fetter the discretion they may have to exercise under that section by expressing an opinion on the question raised in your letter, but they would point out that the meaning of the word "pure" is explained by the concluding words of the sub-section.—I am, Gentlemen, your obedient servant,

T. H. ELLIOTT, Secretary.

We confess we know no other country where such a rich specimen of governmental ignorance could be possible. The Board of Agriculture introduced the measure and passed it through Parliament. Mr. Elliott and his fellow officials were responsible for its drafting, yet we here have the revelation made that they do not know the meaning of their own drafting. If they do not, how on earth can they expect the analyst, the dealer, or the farmer to know it? The public analyst has troubles enough already, and what with Somerset House, Works Chemists, and "Expert testimony," "E dunno where 'e are" any more

than the manufacturer of vinegar or the lard refiner knows. When the Board of Agriculture joins the bewildered trinity, and Mr. Elliott blurts out publicly a fact which we had privately known for a long time, that he, his chief, and the Board's officials, "dunno where they are," it is very evident that dealers in fertilisers and feeding stuffs, and public analysts, are about to have a troublous time. Whether the farmer will benefit is a matter we have grave doubts about. That he will have to pay an increase in price is certain, but in face of this revelation we question if he won't get the same amount of adulteration in the end. True, he will get analyses for 2s. 6d., or thereabouts, that cost one guinea to 30s., and the grocer and other traders along with the public will be taxed to pay the balance, to work an act of which its own authors do not know the meaning. It is a curious study in more ways than one, is this of the agriculturists and their leaders. For example, another party who "dunno where e' are" is "Professor" Long, adviser in general to the Central and Associated Chambers of Agriculture. At a meeting of that body a fortnight ago he spoke of condensed milk, of which the quantity sold in our markets was simply enormous. He said:

In the case of one factory in Switzerland they were sending 12,000,000 tins to England annually. The condensed milk was used very largely with added water as ordinary milk. It was used in hotels and on the lar. line of steamers. As a matter of fact, a large proportion of this condensed milk was now skimmed before being condensed. He had examined several brands in which he had found that the actual value of the milk constituents in a threepenny tin was one halfpenny.

Now this is not only absolute nonsense, but it is untrue. The Swiss Condensed Milks imported into England are practically two in number, viz., Nestlé's, and the Anglo-Swiss Condensed Milk Company's brands. If Professor Long knows anything really about this question, which we much doubt, he ought to know that the imported condensed milk from Switzerland is not skimmed, but that, on the contrary, it is genuine full cream milk. We have had many samples analysed, and found them to contain as high as 12 to 13 per cent. of fat. Therefore, as it requires three pounds of milk to make one pound of condensed milk, the fat percentage must have been at least one per cent. higher than is the case with ordinary London milk, or than Somerset House now proclaims genuine milk. There is "skimmed" condensed milk in plenty on the market, but it is not from Switzerland. It is like Professor Long's ignorance—of native manufacture. There is little wonder that a chamber of agriculturists who could listen to such twaddle as this upon condensed milk should have been afraid to come to close grips with the gang who worked Sir Algernon West into advising Mr. Gladstone to repeal the malt tax and allow the brewer to make beer of any trash he chooses to use, to the ruin of English barley growing, the enforced idleness of thousands of English labourers, and the foisting upon the public of chemical swipes instead of honest English ale. An impudent bit of bounce by Dr. Moritz, the "swipe" brewers' "*advocatus diaboli*," who said, "Let the English farmer beware, however, that he does not exchange the fire for the frying-pan." "If brewers are interfered with in the legitimate use of malt substitutes they will fly to foreign barley" struck terror into the farmers' representatives. Eminent legislators like the Right Hon. James Lowther, M.P.; Mr. Channing, M.P., etc., did not seem to know that if foreign barley were as good as English, as it is cheaper, no consideration of patriotism would debar the swipes brewers from using it, and the chambers practically apologised to a gang of persons who, because the folly of Sir Algernon West and Mr. Gladstone allows them to sell any trash as beer, vend to Englishmen chemical swipes in place of the honest product of malt and hops. There is scant cause for wonder that after this the agriculturists' combined wisdom, aided by "Professor" Long, should propose that no greater amount than six per cent. of butter should be allowed to be mixed with margarine. Apparently neither the learned professor nor his fellow agricultural leading lights, knows that there is not a chemist in the kingdom who could undertake to analyse a margarine and swear

honestly to a six per cent. admixture of butter. There is not an expert in butter who does not know that almost every pound of butter imported into this country contains from five per cent. upwards of margarine, but there is not a chemist or public analyst who would dare to swear to so small a percentage, for the reason known to everyone, save the leaders and advisers of the agriculturists, that chemical science is not sufficiently advanced to enable such a percentage to be determined with accuracy. The proposal, therefore, is a mere revelation of ignorant nonsense.

The fact of the matter is, that none of these agricultural *poseurs* knows anything really about the question, and neither the Central and Associated Chambers nor the Board of Agriculture have the honesty to frankly avow their ignorance and to take steps to gain real knowledge upon it. There have been no extended researches in this country into the question of food adulteration, for the simple reason that it would not pay anyone to undertake them. Such investigations properly carried out, and a real compulsory adulteration act would benefit agriculturists to the extent of millions of pounds annually, whilst they would save the public at least seven millions of pounds per year; but what would any individual scientist who undertook, say, researches into minute percentages of margarine in butter get? He would lose his time, his reputation, and his money, for the manufacturers practising the swindle would defend the cases, they would demand that the samples so adulterated be referred to the Government's chemists at Somerset House, and these gentlemen would be unable to declare that the butters were other than genuine, *because they really know nothing about any methods of detecting small percentages of adulteration*; yet the public is defrauded of at least £520,000 per year by this admixture of some five per cent. of margarine into all butters imported from abroad. Take another article—whiskey. There is no chemist who can say by analysis how much of the spirit in a bottle of whiskey is from potato, and how much from Indian corn. Now, whiskey is bought by the public under the belief that it is the product of malt; but it is not, for at least seven-eighths of the whiskey sold is a mixture of potato, Indian-corn, etc. Spirit-imported articles, not grown by us, and the use of which displace thousands of English labourers, whilst the vile doctored trash is responsible for nausea and headache that does not attend the imbibing of a pure malt spirit like John Jameson's Irish, old Bushmill's Irish or Lennox's Scotch whiskies. It is right that there should be legislation compelling the "faked" whiskies to be labelled potato-whiskey" or "Indian-corn whiskey," as the case may be, but in the present state of government chemists' ignorance how is this to be done? We may be told that this state of things will be altered now that Professor Thorpe has taken charge of the chemical department of Somerset House and the Board of Agriculture, but we have yet to learn that Professor Thorpe has ever taken any interest, either chemically, economically, or socially in such questions, or that any funds and powers are placed at his disposal for research into these and like matters. We recognise that Professor Thorpe is a reputable scientist, and that his appointment in place of that of Mr. Bannister is in deference to us; but granting that, the whole position is exactly as it was. The Long's and like irresponsible *poseurs* or *ignorami* meet, and meet, and talk rubbish. Before we can legislate on margarine, we want to know what margarine is, and if butter is as wholesome as the anathematised substance that is displacing it in public favour. We have ourselves spent considerable time and money in experiments to get at the truth about margarine and butter mixtures, and our researches, based upon analyses and experiments with every known imported butter, with English and Irish butters, butter mixtures, and margarines, go to prove that butter mixtures are in every way preferable to more than half the so-called genuine butters; that they have higher fat percentages, less curd, and less water, and are practically more wholesome than the butters they

compete against so successfully. It is useless to fight against truth, and the sooner agriculturists recognise this the better it will be for them. But ought not experiments like these be made by a Government department, independent and devoid of any self-interest, and whose opinion could be accepted with perfect confidence by the public? One hundred thousand pounds per year spent on a department for scientific research and a compulsory adulteration act would save England seven million pounds annually, suppress the sale of margarine as butter—which is all agriculturists can honestly ask, and is in the public interest—compel the brewers to once more traverse the path of honesty, and the distillery to cease to be a mixture of the chemical flavouring, potato, and Indian-corn warehouses. But there, for all this we want brains, which is precisely what the Board of Inland Revenue, the Board of Agriculture, and the host of Honourable and Right Honourable nincompoops, who do England the honour to draw anything from £1,000 to £10,000 per year, do not appear to possess.

INSPECTORS AT DINNER.

THE sixth annual dinner and smoking concert of the inspectors of the Strand District Board of Works will take place at the Covent Garden Hotel, Southampton-street, Strand, on Thursday, March 29th, at 6.30 precisely. The chair will be taken by the Medical Officer of Health, Dr. F. J. Allan, F.R.S.E., and he will be supported by the surveyor, Mr. Ventris, C.E., and other officials. This meeting has come to be recognised throughout London as one where the officers of all vestries and boards may meet and spend a happy evening. We understand a large number of gentlemen have already taken tickets, and those who have not done so but who wish to be present should apply without delay to Mr. T. F. Strutt, 5, Tavistock-street, Strand, W.C.

CAN A COUNCILLOR ACT AS MEDICAL OFFICER?

A PUBLIC meeting was recently held at Inverkeithing for the purpose of recommending a gentleman to the Council to fill the vacancy caused by the retirement of Dr. Menzies. The doctor was present, and in explaining the reason of his retirement, he said that a complaint had been made to the Board of Supervision setting forth that he could not legally hold the position of Town Councillor and Medical Officer of the Burgh. After the complaint had been made, he had received the following extract minute of the Board of Supervision:—"The Board consider it most inexpedient that a member of the Local Authority should hold the office of medical officer, and they are of opinion that Dr. Menzies would be well advised to tender his resignation of the office; and they continue further consideration of the complaint that has been lodged, so that a copy of this minute may be transmitted to the chief magistrate and to Dr. Menzies." In a subsequent letter the secretary to the Board of Supervision said:—"In their minute of the 11th inst. the Board had no intention to suggest that you had been guilty of failure or neglect of duty, and no allegation to that effect was made. But in their view the legality of a member of the Local Authority holding the office of medical officer is open to doubt. Even if it were decided to be legal, the Board are clearly of opinion that it is very inexpedient. They accordingly offer you an opportunity to resign one office or the other; it is immaterial to them which." In another letter the secretary of the Board of Supervision said:—"The Board have carefully considered the situation, and have instructed me to advise you, in your own interest and that of the public health administration, to retire from the Local Authority as being in their opinion the wisest course." In view of the distinct recommendation of the Board of Supervision, he had thought it best to retire from the Council.

THE IRISH BUTTER DEALERS THROW UP THE SPONGE.

THE prosecutions instituted by the Manchester Corporation against butter merchants and retail grocers—who were alleged to have sold Irish butter containing an excess of water—again came before Mr. Headlam on March 13th. Mr. Sutton appeared for the Corporation, and Mr. R. A. Edgar (Messrs. Boote and Edgar) for the defence. Mr. Sutton, addressing the Court, said with regard to the cases of Messrs. James Riley and Julius Wilber, but for merchants, two of the summonses were on the same lines as previous ones, and a third alleged adulteration with foreign fats. The summonses alleging an excess of water would be withdrawn, but with reference to the third summons he asked that the hearing should be adjourned until April 3rd. In the matter of Henry Whittle, who was the actual seller of the butter, the Corporation analysis showed 23 per cent. of water, and the prosecution felt that that was such a quantity as not to make the case fall within the decision that had been given by his worship, but they left the matter entirely in his (Mr. Headlam's) hands. Mr. Sutton then read the following letter, which had been received by the Corporation from the defendants' solicitors:—"In these cases it will not be necessary that you should call any evidence except the formal evidence to prove the purchase. You can put in the analyst's certificate, and although the analyses taken by our clients show better results than those made by Mr. Estcourt, particulars of which analyses we have already given you, we do not propose to dispute the analyses or to offer any defence. Our clients are influenced by the observations of Mr. Headlam in giving his decision on the previous occasion, when he said 'It seems to me indeed that it is one which can only be properly determined by the Government.' The wholesale dealers desire me to intimate to you that that is the course which they have all along thought to be the proper course to pursue, and to further intimate that they will readily join with the Corporation in endeavouring to obtain an inquiry upon the subject and the ascertainment and the fixing of a standard which shall be satisfactory and shall be binding. Under the circumstances they do not consider that it is desirable to keep up a prolonged litigation with regard to the matter, and they will therefore leave these cases entirely in the hands of the stipendiary." Mr. Edgar said his clients felt that it was no use keeping up the contest in this matter after the decision given on a former occasion, and were strongly of opinion that a proper standard should be fixed by Government. They were perfectly willing to join with the Corporation in securing that result, which would once for all settle the vexed question. In the case of Whittle, their analysis showed only 20½ per cent. of water, which did not quite come within the terms of the decision that had been given. Mr. Sutton observed that the Corporation did intend to bring the matter before the Association of Municipal Corporations with the view of having a standard fixed by Parliament.—Mr. Edgar also pointed out that the Chairman of the Sanitary Committee of the Corporation had mentioned in the course of some remarks on the subject of these prosecutions that samples had been sent to Somerset House for analysis, but such was not the case.—Mr. Headlam stated that in the case of Whittle he would inflict a fine of 20s. with 45 costs.—Mr. Sutton next mentioned that Mr. James Kay, butter merchant, Corporation-street had been summoned in respect of two warranties given to retailers about the beginning of September last. In one instance Mr. Estcourt's analysis gave 20½ per cent. of water, and in the other 22 per cent.—Mr. Edgar reminded the magistrate that the butter was made at a hot period of the year, and pointed out the extreme difficulty which then existed in extracting water from butter in the process of manufacture. That the defendant sold the butter honestly was fully proved, he said, by his giving a warranty.—A penalty of 20s. with 45 costs was also ordered to be paid in this case, but only in respect of one summons.

At Newcastle police-court on March 13th, Robert Bell, provision dealer, 231, Shields-road, Byker, was charged with offences under the Margarine Act, 1887. The first charge was that defendant had sold half a pound of margarine, without having enclosed it in a wrapper bearing the word "Margarine" in capital letters at least a quarter of an inch square. Defendant admitted the offence, and was fined £3 and 6s. costs.—Defendant was further charged with having some packages of margarine on the counter without having a label to that effect upon them in letters at least an inch and a half square. Defendant produced a label, which he said was on the margarine.—Mr. Wells, the inspector, said the label was there, but was under some paper and could not be seen.—Defendant was fined £2 and costs in this case.—Defendant: What is the alternative?—Mr. Roberts (clerk to the Justices): The alternative is a distress warrant on your goods, or you must go to gaol. Defendant: Well, they must do that; I cannot afford to pay.

At Southwell Police-court on March 16th, Henry Tongue, provision dealer, Farn field, was charged with the sale of adulterated butter.—Mr. Elliott Smith made a technical objection. He said the sample was taken on January 17th, and the summons issued February 23rd, which was more than the 28 days allowed by the law for perishable goods.—The Bench, however, decided that butter was not a perishable article within the meaning of the Act.—George Ernest Garth, Inspector of Food and Drugs, deposed to purchasing half a pound of butter from defendant's shop at Farn-field on January 17th, which he divided in the usual way. The public analyst reported the presence of 25 per cent. of margarine.—Mr. Smith called Mrs. Tongue, the wife of the defendant, who stated that she had entire control of the shop. No margarine had been in her shop for six months. She bought her butter from Miss Parr and the Mrs. Bealby.—The Bench said the sale of the butter was admitted, the only defence being that it was adulterated by some one else, and they would inflict a fine of £5, including costs.

HORLICK'S
MALTED
For Infants
and Invalids. **MILK**
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

WHAT LARD IS.

By H. W. WILEY, CHEMIST TO THE U.S. DEPARTMENT OF AGRICULTURE.

From the *National Provisioner*, New York.

LARD is a term applied to the fat of the slaughtered hog, separated from the other tissues of the animal by the aid of heat.

In the crude state it is composed chiefly of the glycerides of the fatty acids, oleic and stearic or palmitic, with small portions of the connective tissues, animal gelatine, and other organic matters.

KINDS OF LARD.—According to the parts of the fat used and the methods of rendering it, lard is divided into several classes. According to methods of rendering, lard is classified as *kettle* and *steam*. From material used the following classification may be made:

NEUTRAL LARD.—Neutral lard is composed of the fats derived from the leaf of the slaughtered animal, taken in a perfectly fresh state. The leaf is either chilled in a cold atmosphere or treated with cold water to remove the animal heat. It is then reduced to a pulp in a grinder and passed at once to the rendering kettle. The fat is rendered at a temperature of 105deg. to 120deg. F. (40deg. to 50deg. C.). Only a part of the lard is separated at this temperature, and the rest is sent to other rendering tanks to be made into another kind of product. The lard obtained as above is washed in a melted state with water containing a trace of sodium carbonate, sodium chloride, or a dilute acid. The lard thus formed is almost neutral, containing not to exceed 25 per cent. free acid; but it may contain a considerable quantity of water and some salt. This neutral lard is used almost exclusively for making butterine (oleo-margarine).

LEAF LARD.—The residue unrendered in the above process is subjected to steam heat under pressure, and the fat thus obtained is called leaf lard. Formerly this was the only kind of lard recognised in the Chicago Board of Trade, and was then made of the whole leaf.

CHOICE KETTLE-RENDERED LARD.—The quantity of lard required for butterine does not include all of the leaf produced. The remaining portions of the leaf, together with the fat cut from the backs, are rendered in steam-jacketed open kettles, and produce a choice variety of lard known as "Kettle Rendered." The hide is removed from the back fat before rendering, and both leaf and back fat are passed through a pulping machine before they enter the kettle. Choice lard is thus defined by the regulations of the Chicago Board of Trade:

CHOICE LARD.—To be made from leaf and trimmings only, either steam or kettle rendered, the manner of rendering to be branded on each tierce.

PRIME STEAM LARD.—The prime steam lard of commerce is made as follows: The whole head of the hog, after the removal of the jaw, is used for rendering. The heads are placed in the bottom of the rendering tank. The fat is pulled off of the small intestines and also placed in the tank. Any fat that may be attached to the heart of the animal is also used. In houses where kettle-rendered lard is not made, the back fat and trimmings are also used. When there is no demand for leaf lard the leaf is also put into the rendering tank with the other portions of the body mentioned. It is thus seen that prime steam lard may be taken to represent the fat of the whole animal or only portions thereof. The quantity of fat afforded by each animal varies with the market to which the meat is to be sent. A hog trimmed for the domestic market will give an average of about forty pounds, while from one destined for the English market only about twenty pounds of lard will be made. Prime steam lard is thus defined by the Chicago Board of Trade:

PRIME STEAM LARD.—Standard prime steam lard shall be solely the product of the trimmings and other fat parts of hogs, rendered

in tanks by the direct application of steam, and without subsequent change in grain or character by the use of agitators or other machinery, except as such change may unavoidably come from transportation. It shall have proper colour, flavour, and soundness for keeping, and no material which has been salted shall be included. The name and location of the renderer and the grade of the lard shall be plainly branded on each package at the time of packing.

This lard is passed solely on inspection, the inspector having no authority to supervise rendering establishments in order to secure a proper control of the kettles. According to the printed regulations, any part of the hog containing fat can be legally used.

Since much uncertainty exists in regard to the disposition which is made of the guts of the hog, I have had the subject carefully investigated. Following are the results of the study:

GUTS.—The definition of the term as used by hog packers is: Everything inside of a hog except the lungs and hearts, or, in other words, the abdominal viscera complete. The material is handled as follows:

When the hog is split open the viscera are separated by cutting out the portion of flesh surrounding the anus and taking a strip containing the external urino-generative organs. The whole viscera are thrown on a table and divided as follows: The heart is thrown to one side and the fatty portion trimmed off for lard. The rest goes into the offal tank or sausage. The lungs and liver go into the offal tank (or sausage). The rectum and large intestines are pulled from the intestinal fat and peritoneum and, along with the adhering flesh and genito-urinary organs, sent to the trimmer. All flesh and the above-mentioned organs are trimmed off and the intestine proper is used for sausage casings. The trimmings, including the genito-urinary organs, are washed and dumped into the rendering tank. The small intestine is also pulled from the fatty membrane surrounding it and saved for sausage casings. The remaining material, consisting of the peritoneum, diaphragm, stomach and adhering membranes, together with the intestinal fat, constitute the "guts" which are seen undergoing the process washing, which is usually conducted in three or four different tanks. As the "guts" pass into the first tank the stomach and peritoneum are split open, and also any portions of the intestines which sometimes adhere to the peritoneum. After receiving a rough wash they are passed from tank to tank, when, after the third or fourth wash, they are ready for the rendering tank. The omentum fat is cut from the kidneys, and the kidneys, with a little adhering fat, go into the rendering tank. Spleen and pancreas go into the rendering tanks, as do also the trachea, vocal chords, and œsophagus.

To sum up, it is safe to say that everything goes into the rendering tank, with the following exceptions:—

1. The intestines proper, which are saved for sausage casings.
2. The liver and lungs.
3. That part of the heart free from fat.

I have been told that in killing small hogs, and also when there is small demand for sausage casings, it is frequently the practice to split the intestines, so as to save expense of pulling from the fat, and, after washing, fat and all go into the tank. Of course it will often happen that the intestines break off and portions adhere to the enveloping tissue, and consequently get into the tank after washing.

It is a commercial fact that sausage casings are worth more than the small amount of adhering fat, and consequently packers will save them. Small hogs produce small casings, difficult to pull, and it is reasonable to believe that they will be handled in the simpler manner. They break so easily that they are hardly worth saving separately. It is stated by lard manufacturers that the grease made from the parts of the intestines mentioned above is used for the manufacture of lard oil and soap, and does not enter into the lard of commerce.

(To be continued.)

IRVEN BROTHERS,

Bank Buildings, Victoria Street, } LIVERPOOL.
Entrances—Sir Thomas's Buildings & Cumberland Street,

WARRANTED PURE

"LI-VER" Brand of Lard.

BALLARD'S MALT VINEGAR.

Brewery—COLWALL, MALVERN.

GUARANTEED ABSOLUTELY PURE.

THAT GOOD MAN W. T. STEAD.

THE journalistic tout for the Mattei Quack Cancer Cure-cum-Drunk-Cure Swindle has been telling the public what he thinks of Chicago. The Chicago *Medical Press* has been also telling the public what it thinks of W. T. Stead as follows:—"Our wonder is ever called forth afresh at the unlimited impertinence and successfulness of the Mephistophelean quack. However crushed by exposure, however deep the disgrace, he rises phoenix-like from the ashes of one diabolical scheme to start anew with another still more preposterous and brazen. The stupidity and gullability of human nature is always equal to the challenges of its inordinate masters. The career of Stead is in evidence. He should have realised a satisfying fortune from the Mattei cancer-cure swindlers. Simple, plain, unadulterated water was sold at about a dollar a bottle under the name of white, green, and red electricity, until the Medical Investigating Committee cornered him up, and he was forced to confess that his partners were unmitigated scamps. FOOD AND SANITATION, a brave English journal, says the thieves derive a profit from the Mattei 'cures' of 500,000dols. a year. How sincere was his 'shame' and his 'denunciations' is shown by the fact that the English agent of the Mattei swindle is a certain A. J. L. Gliddon. Stead is now pushing a scheme to get 100,000 persons to subscribe 5dols. each to found a new paper. The first number of the new paper is largely devoted to editorial interviews and puffs of the Mattei agent, Gliddon, and his quack cures, but especially to a 'drunk cure,' also worked by Gliddon. The Pooh-Bah Gliddon as a drunk-curer demands 100dols. from his dupes, boards and treats them for a month at a net profit from the 100 patients he says he already has, of something like 6,000dols. a month. The crowning touch of marvel is not wanting in the fact that Stead announces that his new journal and his personal role in life is 'the rooting out of mean fraud, and the punishment of the scoundrels who would steal under the cover of business.' Amazing products of nineteenth century civilisation are these Steads and Steadisms! But it is still more amazing that poor, stupid, deluded human nature never tires of welcoming and loving them."

GLAMORGAN AND THE FOOD AND DRUGS ACTS.

AT the last meeting a resolution was moved by Mr. Evan Lewis to call the serious attention of the council to the unsatisfactory mode of obtaining samples by the inspectors under the Food and Drugs Act, with a view to curtailing the enormous amount of money now expended on fruitless and abortive prosecutions, and, further, to call upon the clerk of the council for a return showing separately the total amount expended in successful and unsuccessful prosecutions under this Act since the election of the present council. The resolution was defeated.

On the motion of Mr. W. Williams (Trealaw) it was decided to petition Parliament to so amend the Food and Drugs Acts, 1875 and 1879, as to guard against the prejudicial effect which the recent decisions are calculated to produce upon the health of the nation at large.

LEAD POISONING FROM TEA.

FREEMAN (*Lancet*, No. 3663, p. 1185) reported five cases of undoubted lead-poisoning and some half-a-dozen cases in which there were obscure abdominal pains and constipation without the presence of a lead-line, in three of which the source of intoxication was carefully looked for but could not be detected. In one case the tea used was examined, but with a negative result. Nine other cases presenting a well-marked blue line, as well as several others, in which there were abdominal pains and constipation, coming under observation at a later period, the tea was again examined, and this time with positive results. Lead was found in varying amount, both in the loose tea supplied to some of the patients and in quarter-pound packets wrapped in lead-paper. In all of the cases abdominal symptoms were present, together with marked pallor, severe facial neuralgia in one, pains in the limbs in another, and gout in a third. In two or three cases there was vomiting, and in one or two diarrhoea. In one case a relapse took place.

The firm supplying the tea thus alleged to be poisonous do an enormous business, which they allege has been materially injured by the disclosures and allegations of lead poisoning, and a case may come before the courts in connection with the revelations.

YEAST WITH 25 PER CENT. OF STARCH.

WE pointed out at the time Justices Hawkins and Lawrence gave the dangerous and ridiculous judgment that baking powder was not an article of food, that their ignorance of the article they were dealing with would lead to the law even becoming a greater "ass" than the curious judgments of some of the judges have lately made it. Exactly as we foretold, yeast has now been held by one bench of magistrates to be outside the pale of the Adulteration Acts. The case occurred at Basingstoke last week, when Edwin Granville, trading as Glanville and Co., provision merchant, of Wote-street, was summoned for selling on February 8th last, to D. S. Thomas, German yeast which contained at least 25 per cent. of starch. An assistant had described the article as "German yeast, but made in England." Mr. Sherwood, for the defence, said that the yeast was not a food within the meaning of the Act, and he referred to a recent case in which it was decided by Justices Hawkins and Lawrence that baking-powder was not a food; and he (Mr. Sherwood) contended that yeast must be classed in the same category. The Bench, after retiring, dismissed the case, being of opinion that it came under the exemption referred to. Mr. Sherwood stated that he was instructed not to ask for costs, and the prosecutor gave notice of appeal.

This case may, or may not be, upset upon appeal, but it has a moral of its own, viz.,—What does it benefit the grocer or baker that such quibbles should be raised? Clearly nothing whatever, for whether the law says that yeast is food or not, the broad fact remains that 25 per cent. of starch is not yeast, and that it is unfair upon the purchaser to sell it as yeast, and laws quibbles or no quibbles, the grocer who, when his eyes are opened to the adulteration, allows the maker to use him as a catspaw, and continues to vend such an article, is not only injuring his own interests, but the repute of his class, for no quibble can do away with the fact that such yeast is 25 per cent. weaker by the admixture. There is no excuse whatever for the sale of such yeast, when there are so many firms who can guarantee their yeast genuine. If the trade would buy only yeasts from the Yeast Union, Schiedam, they would save themselves prosecutions bringing ill repute, loss of business and money, for each package is guaranteed absolutely pure.

THE CONGREVE "REMEDY" FOR CONSUMPTION.

THIS 'name brings to mind those quackish "God-provided remedies," advertisements of which are almost constantly to be seen in the religious newspapers of Great Britain. Within the past year, we understand, a Congreve branch has been started in the United States, and fulsomely flattering advertisements have begun to crop out in our own religious journals. A published analysis tends to show that the Congreve medicines consist of an infusion of elderberries with Friar's balsam.

Three Highest Awards, Chicago, 1893.

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KINGZETT'S PATENT SULPHUR CANDLES.

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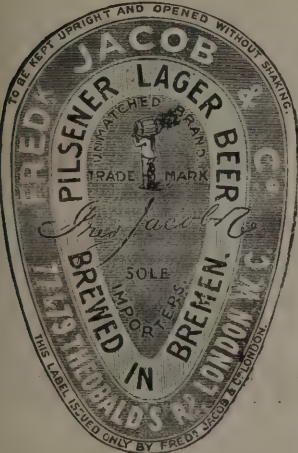
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Of all the Principal Wine and Beer Merchants throughout the United Kingdom



THE MARGARINE ACT.

GEORGE MCBAIN, provision merchant, 163, Main-street, Arderston was fined £2 1s for a similar contravention of the Act.

HENRY HEMPHILL, of 340, Park-road, was fined 90s. and costs for buying three lumps of margarine on the counter without labels on the 1st inst.

AT Wrentwood on March 15th, Mary Bailey, grocer, Cranham, was fined 10s. and 7s. 6d. costs for selling as butter a substance containing 90 per cent margarine.

THOMAS HUNTER, grocer, 94, Thistle-street, for a like infringement was fined £1 15s. He said he was ill at the time, and a strange lad was in charge of the shop.

CORNELIUS NEIL, grocer, 516, Cathcart-road, for a similar offence was fined £ 12s. He stated that the label had during his absence fallen into an adjoining kit which contained kitchen tea.

AT Uxbridge, Mrs. Ellingham Hayes was on March 12th fined £2 in all, on two summonses, for selling margarine without a printed wrapper, and for exposing it for sale without being labelled.

AT Burnley, Richard Rutherford, grocer, was summoned on March 11th for selling as "Delicious pure butter, 1s." a substance containing 70 per cent. of foreign fats. The magistrates gave Mr. Rutherford a delicious pure fine of £10 and costs.

AT Liverpool on March 14th, John Dunn, 100, Westminster-road, came up looking very serious before Mr. Stewart, to whom he presented his assistant, John O'Brian, as guilty of selling margarine as butter. The stipendiary fined O'Brian £5 and costs, and dismissed the summons against Dunn.

THE St. George Co-operative Society, 544, St. Vincent-street, were convicted of having exposed for sale an unlabelled kit of margarine. The Sheriff said that there was no intention to defraud, but the salesman began selling from a kit before he had got a label for which he had sent. The fine was limited to 10s.

THOMAS HEGARTY, of 11, Scotland-road, was summoned for selling half a pound of margarine for shilling butter. The purchase was proved, and the analyst's certificate showed that the article contained 10 per cent. of water and 80 per cent. of fats other than butter. There were two previous convictions against the defendant, and he was now fined £5 and costs.

AT Newcastle on March 13th, Robert Bell, Shields-road, was fined 60s. and 6s. costs for selling margarine as butter, and 40s. and costs for having margarine exposed for sale without a label. Mr. Bell said he worked in his shop from 7 a.m. till 10 p.m., and what with the stores and the like he could not get a living, and he could not pay the fines. He was told he must pay, be sold up, or go to prison.

ANDREW COULTER, 8, Rose-street, was summoned for a similar offence. The purchaser asked for half a pound of shilling butter and the article supplied contained 9 per cent. of water and 70 per cent. of fats other than butter. Defendant said the article on the counter had a large label on it, and his assistants had strict instructions. In this case there had also been previous convictions, and Mr. Stewart said this was rather a worse case than the other, and he fined the defendant £7 and costs.

WILLIAM HENRY WEBSTER, provision merchant, 173, Butterbiggins-road, pleaded guilty of having committed a similar offence. His excuse was that the kit to which the label was attached was almost empty, and that this other kit had been opened, and some of the margarine taken out for the use of his own family.—The Sheriff said he was quite aware that analysts could not work without fee, but could not the inspectors, when they took samples of margarine, in such cases get the merchant to write a letter saying that it was margarine, so as to save the analyst's fee? In some cases he would only impose a very small penalty—say 1s. or 2s. 6d.—if it were not that the analyst fee and the other expenses incurred by the prosecution must be paid.—Mr. Lindsay said he was bound to prove that the article was margarine. He did not know what Lord Young or Lord Trayner would say if a case went to the Court of Session, and it turned out that his officers had got respondents to incriminate themselves.—The Sheriff said that he would take the responsibility of allowing it. So far from a respondent incriminating himself it was saving him a guinea.—Mr. Lindsay said there was the further difficulty, that, before the sanitary inspector could prosecute, an analysis of the article must, according to the Act, be made, in order to prove that an offence had been committed.—The Sheriff: Am I right in saying that there is some idea of a change?—Mr. Lindsay: There is a sub-committee of the Health Committee at present considering the question. I expect that they will pre-recognise your lordship as a witness upon the subject.—The Sheriff: There are undoubtedly some points that might be improved. He imposed a fine of £1 13s.

AT Glasgow Sheriff Summary Court on March 15th, before Mr. Sheriff-Substitute Birnie, James Brownlie, provision merchant, 6, Govan-street, was charged with having exposed margarine for sale without the prescribed label. He pleaded not guilty, and after the sanitary inspector had given evidence, he stated that the margarine was kept in a special department of the shop, and that there was a ticket above three kits, of which that referred to was one, although there was no label on it. The word "margarine" was distinctly branded on the front and top of the kit.—The Sheriff asked the prosecutor (Mr. John Lindsay, assistant clerk of police) what was the use of having a label when the word

"margarine" on the kit was exposed to the purchaser.—Mr. Lindsay: It might not be exposed.—The Sheriff: But when it is exposed?—Mr. Lindsay pointed out that the letters on the label must be one and a half inches square, whereas those on the kit, which were put on by the wholesale dealer, only required to be three quarters of an inch.—The Sheriff said he was very much inclined to think that the respondent was honest in his statement, and that he had no desire to do what was against the Act, but he had infringed it. The words of the clause were quite clear. One would say that it might have been sufficient to have the label "margarine" lying over the three packages, because it might be said that that applied to each of the packages. That was a common-sense view, but he would not advise retailers to trust to it. There was a good deal to be said for the other view, but the Act required that the brands should be of different size, and he had no power. Somebody must pay the expenses which had been incurred, and he imposed a fine of £1 14s., of which 1s. was penalty, and the remainder expenses.

THE MANCHESTER CITY COUNCIL ASK SOMERSET HOUSE TO FIX WATER IN BUTTER AND FAT IN MILK STANDARDS.—

The monthly meeting of the Manchester City Council was held on March 7th, at the Town Hall, the Lord Mayor (Mr. Alderman Marshall) presiding. Mr. Alderman Walter Smith moved the adoption of the proceedings of the Sanitary Committee, which contained a resolution relative to the recent prosecutions for the adulteration of butter by the addition thereto of water. It was to the effect that in the opinion of the Sub-committee appointed to deal with the subject it was desirable that the attention of the Government should be directed to the present unsatisfactory condition of the law and the rules of the central analysing authority with respect to the analysis of butter and other articles, and that it be recommended to the Council to take steps to bring the whole subject before the Municipal Corporations Association, with a view to united action in the matter. He said the manufacturers of good butter were all interested in the matter, and it was very desirable that a standard should be fixed not only for butter but for milk, approved by the authorities at Somerset House. He thought the Municipal Corporations Association might bring such force to bear upon the Government as would induce them to request their analyst at Somerset House to fix such a standard as might be advised.—Sir J. Harwood, in seconding the motion, said he thought the standard to be fixed should not be too high, so that it could be complied with. It should not, also, be irritating. In the next place the fixing of such a standard as he indicated would draw with a good deal of unnecessary litigation. At present the conflicting evidence given in courts upon the matter was perfectly lamentable—evidence given by men of whom it could not be doubted that their knowledge was perfectly true and reliable. The complication of evidence in the recent cases in Manchester was such as was not creditable to the community. A fixed standard for the whole of the country, and a standard that could be readily complied with, was, he thought, desirable both to discourage litigation, and on account of the poor shopkeepers who were trying to earn an honest living.—(Hear, hear.)

ADULTERATED COFFEE.

AT Southport, on March 5th, Edward Rastall, grocer, Chapel-street, was summoned for selling adulterated coffee on January 26th. The Town Clerk prosecuted. Inspectors Kirkbride and Cadwell purchased half a pound of coffee (a mixture of chicory and coffee, for which 6d. was paid, and the borough analyst (Mr. Orsman) stated that the sample submitted to him contained 40 per cent. of a foreign starchy substance. Neither coffee nor chicory contained starch in the natural state, and he could not say exactly what this substance was—it might be baked sago, beans, or peas.—The Defendant said he ground his own coffee beans, but received the chicory ready ground. He had no warranty with it, and used it just as he received it from the manufacturer.—The Chairman said as this was the first case of the kind which they had had, they would inflict only a small penalty of 5s. and costs.

TWO MONTHS' HARD FOR A "SLINK" MEAT BUTCHER.

AT the Guildhall, London, on March 13th, Charles Smith, dealer, Haxey, Lincolnshire, was summoned at the instance of the Commissioners of Sewers, for sending the carcasses of three diseased pigs to the Central Meat Market, intending them for sale of human food.—Mr. Vickery appeared in support of the summons, and stated that this was one of the worst cases that had ever been brought before the Court. Defendant dealt in stock and horses. He also bred pigs. On February 14th the defendant sent three pigs to the market, although he had been cautioned against so doing by the butcher who slaughtered them.—Dr. Sedgwick Saunders (medical officer of health) said that he had examined the carcasses in question. The flesh was congested. It was very soft and wet, resulting from disease.—Alderman Faudell Phillips came to the conclusions that defendant knew the state of the meat when he sent it, and had, therefore, placed himself in the position of a man who sold poison. He would have to go to prison for two months, with hard labour.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
Powell's Balsam of Aniseed—Coughs and Bronchitis.
Powell's Balsam of Aniseed—Coughs and Hoarseness.
Powell's Balsam of Aniseed—Coughs and Lung Troubles.
Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
Powell's Balsam of Aniseed—Coughs.—Established 1824.
Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
Powell's Balsam of Aniseed—Coughs Relieved Instantly.
Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
Powell's Balsam of Aniseed—Coughs.—Trade Mark.
Powell's Balsam of Aniseed—Lion, Net, and Mouse.
Powell's Balsam of Aniseed—1s. 1½d., 2s. 3d.

BLACKMAN VENTILATING CO., LIMITED.

SPECIALISTS in WARMING and VENTILATING, Removing HEAT, DUST or STEAM from Factories and Workshops, and in DRYING any kind of Material or Product.

THOUSANDS OF INSTALLATIONS AT WORK.

Head Office: 63, FORE STREET, LONDON, E.C.

Also at MANCHESTER, BRADFORD, BRISTOL, GLASGOW, and BELFAST.



THE BEEF STEARINE IN LARD CRUSADE.

At Steyning on March 12th, William Laker, Cootham, was fined 10s. and 20s. costs, for selling lard containing 12 per cent. beef stearine. John Hopkins, Steyning, was fined 10s. and 15s. costs, for lard containing 10 per cent. beef stearine. At Chichester, Michael Woolgar, was fined 20s. including costs, for lard containing 15 per cent. beef stearine.

At Worthing Petty Sessions on March 14th, Alfred Osborne was summoned for selling adulterated lard (viz. lard containing 5 per cent. of beef stearine), at Worthing, on January 18th. He was represented by Mr. Williamson, who argued (1) that the analyst's certificate was wrongly filled in; (2) that the officer who bought the lard had divided it into samples without asking the vendor whether he wished that course to be adopted; and (3) that there had been a warranty, the lid of the pail having borne the words "Warranted pure lard." The Bench decided against the defendant and fined him 5s. and 15s. costs, or ten days. Mr. Wilkinson asked the Bench to state a case for appeal, which was agreed to.

At the Southwell (Notts) Petty Sessions on March 16th, Alexander Straw, shopkeeper, was charged with selling lard adulterated with 4 per cent. of beef stearine. The case excited great interest in the provision trade. Messrs. Fowler Brothers, of Liverpool, importers of lard, were represented by Mr. Mulholland, of Liverpool (instructed by Mr. Bellringer), who brought as witnesses the vice-president of the Society of Public Analysts, and the public analysts of Stafford and Liverpool, all of whom declared that the lard was absolutely pure. The prosecuting analyst relied upon a new test, which he said he perfected lately, and which was not generally known. After hearing the evidence, the Bench dismissed the summons.

At the Swansea Police-court on March 15th, Elizabeth Thomas, grocer, of Cwmbrin, was summoned for selling adulterated lard.—Mr. Slater defended.—P. C. Evans, one of the analyst's inspectors, said he purchased half a pound of lard from defendant, which the analyst's certificate showed contained 20 per cent. of added beef fat.—In defence, Mr. Slater produced a corresponding bladder of lard, on which were the words, "Guaranteed pure lard."—Defendant said she purchased the lard from Mr. Richard Jones as pure lard, and Mr. Jones went into the box and swore that he bought it from Messrs. Topping, of Belfast, as pure lard.—The invoices to this effect were put in.—Mr. Slater thereupon contended that the invoice and the words stamped on the lard amounted to a warranty which protected the grocer.—The Bench said in the case heard earlier in the week, when the summons was dismissed, a written warranty was produced, which protected the grocer; but there was no legal warranty in this case which would protect the grocer.—A fine of 20s. was consequently imposed.—Mr. Slater asked the Bench to state a case for appeal, and the Bench assented.

At Swansea Police-court on March 13th, William Evans, grocer, 24, Park-street Swansea, was summoned for selling adulterated lard. Mr. Viner Leeder defended.—Police sergeant Barnett produced the analyst's certificate, stating that 16 per cent. of beef fat was found in 100 per cent. of the lard. This was the first prosecution in Swansea to his knowledge, although he had taken many samples before.—Dr. W. Morgan, borough analyst, proved his certificate. There was no such thing as "trade" lard; if he asked for an article he expected to get the pure article.—Mr. Leeder protested against Dr. Morgan "as usual, being determined to get a conviction at any cost."—Dr. Morgan: I protest, Mr. Chairman, against such a remark. It makes no difference to me.—Mr. Leeder: Yes it does; it makes a difference of a guinea fee. Mr. Leeder produced the lard in bladders, labelled "Guaranteed pure," and Dr. Morgan said he by no means thought the trader himself adulterated it.—Mr. Leeder denied that the certificate was accurate, and produced a warranty from the refiners and the wholesale grocers.—The Bench thereupon stated that upon the warranty they must dismiss the case.

At the West Riding Police-court at Wakefield, on March 9th, Messrs. Irwin Brothers, lard refiners, Liverpool, were charged with selling adulterated lard. Mr. Hiley, from the offices of the West Riding solicitor, prosecuted on behalf of the West Riding County Council, and Mr. Edgar, of Manchester, represented the defendants. The case, which had been adjourned for a fortnight, was in connection with the proceedings taken a fortnight ago against the Leeds Industrial Co-operative Society, who, it was alleged, had, through Mr. Robisher, an assistant at their branch store at Lofthouse, sold to Mr. Talbot Kyle, an inspector under the Food and Drugs Act in the service of the West Riding County Council, half a pound of lard, which on analysis was found to be adulterated to the extent of 12 per cent. with beef stearine. On behalf of the Co-operative Society, it was submitted that they purchased the lard from the defendants in the present case who warranted it pure, and thereupon the case against the Co-operative Society was dismissed. Yesterday Messrs. Irwin admitted that there was 7 per cent. of beef stearine in the lard, but they denied that it was added with any felonious intention. Their contention was that in hot weather like that which prevailed in August last, when the lard was made, it was necessary to stiffen American lard to solidify it, and the beef stearine was added for that purpose. After a long hearing defendants were fined £10, and ordered to pay £32 8s. for cost. The proceedings have been watched with great interest by both wholesale and retail traders.

QUEER LEGAL QUIBBLES AT MANCHESTER.

At Manchester Police-court on March 16th, James Rossiter, a dealer in what is known as "butter rejects," appeared on remand in answer to a summons taken out against him by the Manchester Corporation for selling a quantity of margarine without having the word "margarine" marked on the package. The margarine was, in the first instance, sold as butter, but upon an inspector taking a sample of it, it was found upon analysis to be pure margarine. The confectioner, however, from whom the inspector took the sample, refused to take payment for it, and said, moreover, that it was not exposed for sale. It further appeared that the inspector failed to divide the sample into the usual three parts in order, in case of a prosecution being instituted, to give the defendant an opportunity of having an independent analysis made. Mr. Hockin, who represented the defendant, contended at a former hearing of the case that the method of procedure in view of a prosecution was the same under the Margarine Act as under the Food and Drugs Act—namely, that the article bought should be exposed for sale, and that the sample should be purchased and divided into three parts. None of those essentials had, he pointed out, been complied with in the present instance.—Mr. Headlam said he was of the same opinion as Mr. Hockin, and dismissed the summons. On the application of Mr. Miller, from the Town Clerk's Department, Mr. Headlam consented to state a case for a superior court.—In the second case John R. Skellhorn, farmer, of Moberley, was summoned under the Food and Drugs Act for sending a consignment of milk to a dealer in Manchester, which was found upon analysis to contain 11 per cent. of water. Mr. Hockin, who again defended, raised the same objection as in the former case—viz., that the sample taken by the inspector had not been divided in the usual manner. Mr. Rook, however, pointed out a special clause in the Act which rendered it unnecessary for this to be done.—The Bench upheld Mr. Rook's view and fined the defendant £5 and costs. They also consented to state a case.

A £15 FINE AT LEEDS.

At Leeds, on March 16th, 1894, Joseph Cousins, the Bramley milk dealer, who was fined a short time ago for selling milk which contained too much water, again appeared before Mr. Bruce to answer a similar charge. On February 21st, Inspector Walker purchased a pint of new milk, which, upon being analysed, was found to contain no less than 16 per cent. of added water.—Mr. Bruce said the offence was a very serious one, as the defendant was in a large way of business, and by his action he was likely to bring the retail vendors into contact with the law.—Mr. Jolliffe, who prosecuted, pointed out that defendant had been fined sums of £2 and £4 for the same offence within two months.—Mr. Bruce said he thought he would not be doing right if he did not inflict a penalty which would show people like defendant that they must expect a severe punishment if they were convicted of this offence. He imposed a fine of £15 and costs.

"SOLAZZI."

THIS is the purest Liquorice Juice obtainable. It is a guaranteed specific—in fact, Nature's Own Remedy for Winter Coughs, Colds, and all Chest Affections.

Avoid patent medicines; they often contain dangerous drugs; and try this safe and effective remedy, provided by kindly Nature.

"By far the best and purest."—*Health.*

"The most esteemed of all."—*The Chemist and Druggist.*

The public are warned against cheap, adulterated brands—insist on SOLAZZI.

OF ALL CHEMISTS, CONFECTIONERS, STORES, &c.

GOLDFINCH (Brand) HOLLANDS GIN,

DISTILLED BY HERMAN JANSEN, SCHIEDAM, HOLLAND,

The Largest Geneva Distiller in the world. From own Maltings of Finest Selected Grain.

THE PUREST AND MOST WHOLESOME OF ALL SPIRITS.

Specially recommended to the Medical Profession.

Sole Agent:—MAURICE MEYER, 7, SAVAGE GARDENS, LONDON, E.

REPORTS AND ANALYSES.

NATURAL MINERAL WATERS OF FANGIER GENESTELLE.

THERE are so many mineral waters professing to be natural, but which are mere chemically prepared waters, that the public and the medical profession do well in being on their guard against accepting as truth the glowing accounts of the properties and constituents alleged for most of the so-called natural waters. The Fangier Genestelle Company, Limited, in introducing their natural mineral water to the public, have done well in placing its origin beyond dispute, the mineral springs at Genestelle, Ardèche, France, having been visited by Mr. William Topley, F.R.S., Dr. John Dewar, and others. The yield of the three springs as tested would supply 1,300,000 litre bottles per year—something over 1,000,000 quarts per year. The following is an analysis of the water by John Woodland, F.C.S.:-

Analytical Laboratory,
173, Marylebone-road, London, N.W.

Report upon a sample of Water, labelled "Genestelle."—The number of grains per pint (of 20 fluid ounces) of total solids that it contains is **18.921**. Of these, calcium bicarbonate, sodium bicarbonate, and magnesium bicarbonate are the chief, and form about five-sixths of the whole.

There are also present iron, manganese, sodium sulphate and chloride, with traces of—

- | | |
|-------------|--------------------|
| 1. Silica. | 3. Nitrates. |
| 2. Alumina. | 4. Organic matter. |

This sample is an excellent one for dietetic purposes in every way, and the excess of carbonic anhydride that it contains renders it most agreeable to the palate.

(Signed), JOHN WOODLAND, F.C.S., F.I.S., etc.

Lecturer on Chemistry at the Central School of Chemistry,
173, Marylebone-road, London, N.W.

Mons. C. Bertrand has also analysed the water:—

Acide carbonique libre	...	...	1.876
Bi-carbonate de soude	...	...	0.482
" potasse	...	...	0.037
" magnésie	...	...	0.459
" chaux	...	...	0.995
" fer et manganèse	...	...	0.014
Alumine	...	...	Traces
Chlorure de sodium	...	...	0.047
Sulfate de soude	...	...	0.016
Phosphate de chaux	...	...	Traces
Silice	...	...	0.092
Nitrates	...	...	Traces
Matières organiques	...	...	Traces

Total pour un litre ... 4.018

This analysis was checked by Mr. Lewis Ascott, of Mansion-house Chambers, who agreed with it, save that .017 grammes of lithium chloride was present, unnoted by Mr. Bertrand.

The Fangier Genestelle Waters have been found of great service by leading French physicians, and the following English ones report favourably upon them.

Rusholme.

The mineral waters of Genestelle are a most valuable addition to our present list. They only require to be better known in order to be very widely used. A good alkaline tonic, a mild aperient charged, but not over-charged, with carbonic-acid gas. They form an excellent medium for the exhibition of iron, which in this manner can be given for a very long period without evil effect. The use of these waters is particularly indicated in anæmia, nervous debility, dyspepsia, and the various conditions associated with inactive liver. The taste is slightly ferruginous but pleasant, and the mineral water mixes admirably with wine or spirits.

(Signed) N. C. HARING, M.B. (Lond.), M.R.C.S.,

Hon. Medical Officer to the Chorlton-upon-Medlock Dispensary,
Manchester.

Hornsey Rise.

I find the Genestelle Water very agreeable for table use, and am of opinion that it possesses great therapeutic value. The large amount of free carbonic acid which it contains gives it a palatable pungency, whether taken alone or mixed with whisky or claret. As the gas is not given off too rapidly, the water retains its briskness after re-corking, a quality which adds much to its practical value. Medicinally it is likely to be of greatest service in the chronic forms of dyspepsia, gout, and rheumatism, a numerous and intractable class of cases which too frequently tries the patience and resources of medical men.

(Signed) A. GREENWOOD, L.R.C.P. (Lond.), M.R.C.P., etc.

Linden House, Allos, N.B.

I have great pleasure in bearing my testimony to the good qualities of the Genestelle Water. From its chemical composition it can scarcely fail to prove beneficial in certain forms of dyspepsia, and in rheumatism and its allied diseases. Its dietetic value is also great, and when taken alone or along with spirits or wine, is both pleasant and palatable. I believe it to be one of the best of our available natural mineral waters, and I shall have great confidence in recommending it to my patients.

(Signed) J. HOME-HAY, M.D. (Edinburgh), M.R.C.S., (Eng.),
Diplomate in Public Health, etc.

Thus vouched for, the public may with safety rely upon the new natural mineral water being exactly what it is alleged to be. The water as it comes from the springs is clear, cool, and sparkling, being well saturated with carbonic-acid gas. Fangier Genestelle only needs to be known to become highly popular as a table water, as it is agreeable to the palate, mixes well with spirituous and vinous liquors, and forms a wholesome and refreshing beverage, possessing valuable antacid and tonic properties. The springs are the sole property of M. Daniel Fangier:—

SPECIFIC GRAVITIES OF OILS.—In a very valuable paper discussing late scientific methods for oil testing, the *American Soap Journal* gives the following specific gravities of some of the most important soap oils at a temperature of 60 deg. F.

Olive	...	...	0.9153
Sesame	...	...	0.9225
Rape...	...	...	0.9151
Castor	...	...	0.9645
Arachis or ground nut...	...	...	0.9171
Linseed	...	...	0.935

The following oils were solid at 60 deg. F., hence their specific gravities were taken at the boiling point of water, 212 deg. F., and are:—

Palm	...	...	0.857
Cocanut	...	...	0.870
Tallow	...	...	0.862
Palm nut	...	...	0.866

DR. HELLON of Whitehaven, the County Analyst, was appointed District Analyst for Cumberland under the "Fertilizers and Feeding Stuffs Act, 1893," at the meeting of County Council on 14th inst.

CORRESPONDENCE.

THE MAYBRICK CASE.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—Having been a subscriber to your valuable paper since the commencement of its issue, I have read with interest the several different articles on the Maybrick case, and having served under the late Dr. Tidy, who was engaged at the trial, for several years, I endorse your opinions on the matter.—I am,
Yours truly,

WM. ROLFE.

52, Hemingford Road, Barnsbury, Islington.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER,
24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

D. LENNOX & SONS.

LONDON OFFICE:

41, PALL MALL,
S.W.Bonded and
Bottling Stores,

DUMFRIES,

N.B.

LENNOX'S WHISKY

36/-

42/- 48/-

PER DOZEN CASH.

Delivered within London

Carting Circuit, or Carriage

Paid to nearest Railway Station

in Great Britain.

Do not drink Blends of Malt Grain
and Potato Spirit.Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.Fretful
Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates extracted from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers find that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., 1-lb. sample in handsome enamelled box sent free, on receipt of 3d for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol, Cyprus: "I have never found anything to come up to it for neuralgic and Rheumatic Pains."

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

Food and Sanitation.

SATURDAY, MARCH 31ST, 1894.

AN INQUIRY INTO THE MERITS OF BUTTER
V. BUTTER SUBSTITUTES.

II.

A FEW weeks ago we gave a portion of the results of a series of analyses made with the object of determining what are the relative merits of butter, margarine, and butter substitutes. Since publishing the facts we then gave we have been favoured by Dr. S. W. Abbott, Secretary State Board of Health, Massachusetts, with the report of an investigation ordered by the Legislature in 1887 and undertaken by Dr. E. G. Brackett, of Harvard Medical College. Now that agriculturists and a section of members of Parliament are demanding repressive legislation against margarine, it is well that there should be at least some facts published as to what margarine really is, in order that we might know if the hostility to it is born of ignorance, or if margarine and butter substitutes are in any way inferior to, or less wholesome than, pure butter. Our own conclusions, based upon a large number of experiments published in our issue of February 17th, that Le Dansk butter substitute at 11d.

per lb. was more wholesome than at least three-fourths of the butters sold at 1s. 2d. per lb., and quite equal to the finest Danish butter in flavour, whilst it contained less water and a higher fat percentage, naturally provoked a considerable amount of discussion; but curiously enough, in quarters where our conclusions were the most objected to, other independent investigations have confirmed our opinion. Thus Dr. James Adams, Glasgow, who doubted that such could be the fact and made some inquiries of us, writes:—

Sir,—It is due to you and to myself that I should as speedily as may be inform you that I have had a sample of Le Dansk, have carefully examined it, and with great gratification satisfied myself. In my last letter I used an ill-considered expression when I said that your account of the process of manufacture was inspired. For you clearly inform me that you had personally visited the manufactory at Southampton, and had, moreover, taken a sample at Oxford-street. I forgot these two important incidents, and remembered only the published statements as to the conditions of ordinary butter manufacture, and of the contrasting conditions under which Le Dansk was made. The sample under the microscope is faultless. In ordinary butters I have found, besides the connective tissue, ordinary fats, the hairs, epithelia, acari of various kinds, horrible disjecta membra, worms, larvae of insects, etc., etc. *Ex parte*.—I have tested this sample at table, desiring merely expressions of opinion as to relative merits of two samples of Danish butter, one costing 1s. 3d. per lb., the other price unrevealed until judgment was pronounced that might affect choice for further supply. Practically the deliverance was "six of one and half-a-dozen of the other"—"both the same"—"perhaps a shade of difference in flavour."

Altogether I am highly satisfied, and again thank you for prompt attention.—Yours truly,

JAMES ADAMS.

It is unfortunate that in England we have a Board of Agriculture, with a minister and officials, knowing nothing and caring nothing about independent research into questions of great public importance, such as this, of the

healthfulness or otherwise of an important article of food. The consequence is that the most ridiculous and untruthful statements are daily being made in leading journals by agriculturists with more zeal than knowledge. The report of Dr. Brackett has one advantage over anything we have seen on this question. It is above suspicion, entirely impartial, as a Government report ought of necessity to be, and it is full of suggestive facts. We need not therefore offer any apology to our readers for giving it *in extenso* in our columns, since what the public require on this question is the truth—not vague surmises. Dr. Brackett says:—

"The Legislature of Massachusetts at its last session, after having considered certain questions relative to the manufacture and sale of imitations of dairy products, enacted the following order:—Ordered, That the State Board of Health be requested and required to make a special investigation and report to the next General Court upon the manufacture and sale of oleo-margarine and butterine, especially in reference to their healthfulness as articles of food, and as to the question whether they are sold in compliance with existing laws." In compliance with the foregoing order, the State Board of Health appointed Dr. E. G. Brackett, of Harvard Medical College, to consider and report upon the question of the healthfulness of oleo-margarine and butterine as articles of food.

(To be continued.)

PUNISHING A WARRANTY GIVER.

MR. W. J. BARTLETT, sanitary inspector for Clerkenwell, has happily for the residents in that district, a lack of awe. To summon a common milkman is what any inspector might do, but to haul a "J.P." before the bench and cause his "washup" a fine of £10—Well! it is enough to take on's breath away. It was an Isle of Ely J.P. to boot, and as that district occupies the premier place in the Local Government Board's "black list," as deliberately, although censured times over, violating the Sale of Food and Drugs Acts, we are not sorry that one of its magnates has tasted a little wholesome discipline, and learnt that although Ely may be corrupt enough to "bunk" Acts designed for the public protection, other authorities are neither so shameless nor idle. At Clerkenwell Police-court, on March 21st, Abinger Whitmore, of Burnt-house Farm, Whittsey, Cambridgeshire, was summoned at the instance of William John Bartlett, sanitary inspector of Clerkenwell, for having on December 17th last, given a false warrant in writing to the Farmer and Cleveland Dairies Company, of East-street, in respect of milk sold by him, contrary to the provisions of the Sale of Food and Drugs Act. It was stated that the defendant was a Justice of the Peace for the Isle of Ely, and a hay and corn merchant of London. It appeared that some few weeks ago the Farmer and Cleveland Dairies Company were summoned for having sold milk, found on analysis to be adulterated with 24 per cent. of added water. That summons was dismissed on the ground that the then defendants had a warranty of the pureness of the milk from the farmer supplying the same. The warranty was said to be contained in a contract between the company and the defendant to the effect that the milk supplied by the defendant to the company was to be "genuine pure milk, unadulterated, and with all its cream," and the churns bearing the milk were labelled to the same effect. Evidence was now called by the defendant to prove that the milk was not tampered with from the time it left the cows and was placed in the cart of the railway company. Mr. Bros said he was willing to believe that the defendant had no knowledge of the offence alleged against him, but the Act did not require that the offence should be wilfully committed, and the defendant was liable. He was fined £10.

MORE EXCESS WATER IN CO-OPERATIVE STORES BUTTER.

MESSERS. J. COVE JONES and D. S. Gregg, magistrates, have some peculiar notions as to their duties. The Stratford-on-Avon Co-operative Stores Company were summoned by Mr. F. G. Bennett, inspector for the County Council, for selling butter adulterated with 22 per cent. of water. The evidence of the prosecutor showed that he visited the defendants' branch shop at Alveston on January 25th, and purchased half a pound of salt butter, which the public analyst (Dr. Bostock Hill) certified to be adulterated with 22 per cent. of water, and containing only 68 per cent. of butter fat.—Mr. C. Kettle (instructed by Messrs. Ryland, Martineau, and Co., of Birmingham), who appeared for the defence, submitted that under sub-sections 1 and 4 there was no offence. The first proviso of the section was to the effect that no offence should be deemed to have been committed "where any matter or ingredient not injurious to health has been added to the food, because some is required for the production or preparation thereof as an article of commerce." The second proviso was to the effect that no offence should be deemed to have been committed "where food or drugs is unavoidably mixed with some extraneous matter in the process of production or preparation." Mr. Kettle pointed out that this butter was purchased in Ireland, having been collected from the various small cotters and farmers who were unskilled in its preparation, and he cited various cases in support of his contention that no conviction could follow where the special sections he had quoted were held to be effective. He submitted that the water was necessarily employed.—In the course of cross-examination, Mr. Bennett (prosecutor) admitted that the salt was necessary for the preservation of the butter, and that it was impossible to extract all the water which was used.—The Bench were of opinion that the special sections quoted exonerated the defendants from liability, and dismissed the case. It is scandalous that co-operative stores should be able to escape punishment for offences which when committed by private traders are visited with penalties.

FERTILISERS AND FEEDING STUFFS APPOINTMENTS.

At a meeting of the East Riding County Council a lengthy discussion took place upon the recommendation of the General Purposes Committee to appoint Mr. M. D. Penny, of Hull, analyst, under the Fertilisers and Feeding Stuffs Act of 1893.—Mr. Storehouse made a strong complaint against the committee passing over their own analyst, Mr. Baynes, who was a tried and faithful servant of the Council, and whose abilities, he contended, were much superior to those of any other man in the district. The analyst for the County Council was the analyst for the people, who were to be looked after, and he submitted Mr. Baynes ought to have had the appointment. He moved an amendment to that effect.—Mr. Sutcliffe seconded the amendment.—Ultimately, however, the amendment was rejected, and upon the motion of Lord Middleton, Dr. John Augustus Voelcker, of London, was appointed to the position.—It was decided, upon the recommendation of the committee, that the remuneration of the District Agricultural Analyst to be appointed under the

Fertilisers and Feeding Stuffs Act, 1893, be a retaining fee of 10 guineas per annum, and a fee of 12s. for each sample analysed, one-half of which is to be paid by the person submitting the sample. An amendment reducing the retaining fee to two guineas was rejected.

FURTHER MARGARINE PROSECUTIONS IN BELFAST.

In the Summons Court on March 20th, William John M'Whirter, a grocer, 300, Crumlin-road, was prosecuted by David M'Faster, inspector of foods and drugs, for having exposed for sale margarine, the same not being labelled. Mr. D. F. Sniller prosecuted, and the defendant neither appeared nor was represented professionally. The inspector deposed that on February 19th he went into the shop of the defendant. On the counter he observed a large lump of what appeared to be butter. He reached over his hand to take a little piece to taste it, when Mrs. M'Whirter said it was margarine. The piece was not labelled. In the shop window he noticed a piece of what was like butter. Witness asked to buy 1 lb. but he was also informed that that was margarine. He pointed out a third piece which was not labelled, and on going to buy part of it he was told that it was also margarine. He had cautioned the defendant previously.—Their Worships fined the defendant £3 and costs.

BELGIAN REGULATIONS AGAINST BEER ADULTERATION.

SIR F. R. PLUNKETT, Her Majesty's Minister at Brussels, in a despatch to the Foreign Office, has sent a copy of a royal decree establishing new regulations for preventing the adulteration of beer, and for ensuring, as far as possible, that the beer should reach the consumer in good condition. The following is a translation of these regulations.

Art. 1. It is strictly prohibited to use in the manufacture and preparations of beers products containing matters injurious to health, as also to sell, expose for sale, detain or transport for sale, beers containing these matters, or beers otherwise adulterated.

For the application of the present regulations, such antiseptics as salicylic acid, sulphuric acid, or their saline preparations are considered as injurious to health. The presence of sulphuric acid is, however, permissible in beers when the proportion does not exceed 14 milligrammes per litre, probably originating in a careful disinfection of the cask.

Art. 2. Casks, bottles, or other receptacles, in which beers are contained for the wholesale trade, or in demijohns, must bear in distinct characters the name and description, as well as the address of the maker or merchant.

Every factory or trade mark, regularly deposited, will be sufficient for the purposes of the above regulations.

Art. 3. Taps, pipes, pumps, carbonic acid apparatus, etc., used for the serving of the beer must be kept perfectly clean.

The air admitted to the beers in casks for sale must come from a place free from any cause of contamination and well ventilated, if possible, from outside the houses.

Art. 4. It is prohibited to sell, expose for sale, detain or transport for sale *stribier*, collected in the shops at the bottoms of glasses or on the tables and counters, unless these liquids are denaturalised in such a way that they cannot be utilised as beer, nor serve for mixing with beers, nor be employed in the manufacture of vinegar.

Art. 5. Infractions of the preceding regulations will be met with the penalties provided in the law of the 4th August, 1890, without prejudice to the application of the penalties provided by the Penal Code.

HOW THE HONEST DAIRYMAN MANIPULATES "BOGUS BUTTER."

OUR able contemporary, the *National Provisioner*, New York, says:—

"Professor Harvey W. Wiley, Chemist of the United States Department of Agriculture, Washington, under date of April, 1893, in a message to the Hon. J. Sterling Morton, Secretary of Agriculture, regarding a sample of a nostrum used by 'honest dairymen' who sell 'pure butter,' says:—

"The sample was purchased from parties furnishing it to creameries at Owosso and Vernon, Michigan, who use it in churning over old rancid butter for making fresh creamery butter out of it. It was sent by J. S. Wilson, Secretary of the Michigan Dairy Association, Flint, Michigan.

"It is a white powder, only partially soluble in water. The insoluble portion is composed of wheat or rye-starch and some undetermined granular matter. The sample does not have any power of coagulating milk, and therefore probably contains no organic ferment. The soluble portion is composed chiefly of sodium sulphate and potassium nitrate. It contained of the latter substance 47.80 per cent. It also contained 11.13 per cent. of albuminoid substances. It is essentially a mixture of potassium nitrate with some sodium sulphate and a large quantity of wheat and rye flour."

"The farmers, dairymen, creamerymen, and butter-dealers have much to say about fraudulent substitutes for pure butter. There is a wide difference between the ideal 'pure butter' and the real, although the real may be made from milk or cream. Merely churning sour milk will not necessarily make butter worthy of being called 'pure,' and yet there are those who would have us believe that any product of milk, in any process of decay or adulteration, provided it is *not* mixed with clean, wholesome animal or vegetable fats, is food fit for an epicure, and the maker of it deserving the praise of his fellow men; but that any product of milk mixed with said animal fat is necessarily poisonous and unclean.

"Butter or milk products mixed with clean animal fats, of the same nature as the fat in milk, is called oleo-margarine or butterine. Having been cooked in its manufacture, it does not spoil or become rancid. When butter is at all rancid or strong, decomposition has commenced and it becomes alive with bacteria."

A BILL TO SUPPRESS ADULTERATION.

At the present moment, when so many proposals for fresh legislation are being made, it may be useful to study what is being done in other countries.

Mr. Hatch has introduced a Pure Food Bill into the American House of Representatives, of which the following is the text:—

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the introduction into any State or Territory, or the District of Columbia, from any other State or Territory or the District of Columbia, or from any foreign country, of any article of food or drugs which is adulterated or misbranded within the meaning of this Act is hereby prohibited, and any person who shall knowingly violate any provision of this act shall be guilty of a misdemeanor, and for such offence be fined not exceeding two hundred dollars for the first offence, and for each subsequent offence not exceeding three hundred dollars, or be imprisoned not exceeding one year, or both, in the discretion of the court.

Sec. 2. That the term "drug" as used in this Act shall include all medicines for internal or external use. The term "food" as used herein shall include all articles used for food or drink by man, whether simple, mixed, or compound. The term "misbranded" as used herein shall include all drugs or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, purporting to name ingredients or substances as being contained or not being contained in such article, which statement shall be false in any particular.

Sec. 3. That for the purposes of this Act, an article shall be deemed to be adulterated—

In the case of drugs—

First. If, when sold under or by a name recognised in the United States Pharmacopoeia, it differs from the standard of strength, quality, or purity according to the tests laid down therein.

Second. If, when sold under or by a name not recognised in the United States Pharmacopoeia, but which is found in some other pharmacopoeia, or other standard work on materia medica, it differs materially from the standard of strength, quality, or purity according to the tests laid down in said work.

Third. If its strength or purity fall below the professed standard under which it is sold.

Fourth. If it be an imitation of or sold under the specific name of another article.

In the case of food or drink—

First. If any substance or substances has or have been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength, so that such product, when offered for sale, shall be calculated and shall tend to deceive the purchaser.

Second. If any infer or substance or substances has or have been substituted wholly or in part for the article, so that the product, when sold, shall tend to deceive the purchaser.

Third. If any valuable constituent of the article has been wholly or in part abstracted, so that the product, when sold, shall tend to deceive the purchaser.

Fourth. If it be an imitation of, or sold under the specific name, brand, or trade mark of another article.

Fifth. If it be mixed, coloured, powdered, or stained in a manner whereby damage is concealed, so that such product, when sold, shall tend to deceive the purchaser.

Sixth. If it contain any added poisonous ingredient, or any ingredient which may render such article injurious to the health of the person consuming it.

Seventh. If it consists of the whole or any part of a diseased, filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or of an animal that has died otherwise than by slaughter: Provided, That an article of food or drug, which does not contain any added poisonous ingredient, shall not be deemed to be adulterated or misbranded in the following cases:—

First. In the case of mixtures or compounds which may be now, or from time to time hereafter, known as articles of food, under their own distinct names, and not included in definition fourth of this section.

Second. In the case of articles labelled, branded, or tagged so as to plainly indicate that they are mixtures, compounds, combinations, or blends.

Third. When any matter or ingredient has been added to the food or drug, because the same is required for the production or preparation thereof as an article of commerce, in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight, or measure of the food or drug, or conceal the inferior quality thereof: Provided, That the same shall be labelled, branded, or tagged, so as to show them to be compounds: And provided further, That nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary medicines or articles of food to disclose their trade formulae.

Fourth. Where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

Sec. 4. That this Act shall not be construed to interfere with commerce wholly internal in any State, nor with the exercise of their police powers by the several States.

Sec. 5. Any article of food or drug that is adulterated or misbranded, within the meaning of this Act, and is transported, or is being transported from one State to another for sale, and is still in the original or unbroken packages, shall be liable to be proceeded against, in any district court of the United States, within the district where the same is

found and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, the same shall be disposed of as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States. The proceedings in such libel case shall conform as near as may be to proceedings in Admiralty, except that either party may demand trial by jury of any issue of fact joined in such case, and all such proceedings shall be at the suit of and in the name of the United States.

HER MAJESTY'S NAVY'S VINEGAR CONTRACT.

MESSRS. R. & N. POTT SUMNER & Co., Southwark, have once more obtained the yearly contract for vinegar for the Royal Navy. This firm was established in 1641. It would be interesting to know if there is any other firm existing now that possesses as old a history. It is truly a long way back in business to the times of Strafford, Pym and the vinegar-faced puritans.

A NEW PRESERVATIVE.

H. W. POTTS, chemist, Furoa, in an article to the *Australian Farm and Home*, says: "As a consequence of the able researches of Koch and other distinguished savants, several valuable new antiseptics, or germicides, have been recently introduced, and to these I devoted much attention, and eventually selected 'Formalin' as likely to answer our requirements. This preparation contains 40 per cent. of formic aldehyde, and is manufactured by Schering, of Berlin, under a patent process. Previous to the recent introduction of this germicide, Schnetzler announced that formic acid destroyed one of the most persistent living forms of microbe known (*bacterium subtilis*). From his experiments it was found that this microbe survived the action of boiling water for an hour, but immediately succumbed on being immersed in a solution of formic acid (1-1,000). This chemical, however, could not be applied to milk, owing to its acid character; but formalin, which is closely allied to it, did not appear to possess this objectionable feature, and yet had been proved to be a most powerful microbicide. Numerous tests carried out by Drs. I. Stahl, Berlioz and Frillat demonstrated conclusively the fact that the most persistent micro-organisms were effectually destroyed by formalin, and its power in this direction was equal to, if not greater than, bichloride of mercury (corrosive sublimate). Moreover, the physiological investigations of Aronson, Berlioz, and Frillat proved it to be relatively non-poisonous. It also possesses the further advantages of being very easily handled and cheap. It is a bright, clear liquid, with little odour, and is readily soluble in water or other fluids.

"In no instance, however, could I find from a perusal of the literature on the subject that any scientist had suggested its application to the preservation of milk, to which it seemed so eminently suited; so I determined to thoroughly investigate its usefulness in this direction. The result of a long series of exhaustive experiments carried out by Mr. Lance and myself, not only in our laboratories, but also at the factory and creameries with a practical bearing upon its future use in this connection, proved formalin without doubt to be 'an ideal harmless germicide,' and in our hands revealed a power of preserving milk quite surprising, and altogether superior to anything, so far as we know, that had ever been used for this purpose."

THE YEAR'S WORK IN ST. GEORGE'S, HANOVER SQUARE.

THE variety of samples taken for analysis in St. George's is gratifying when contrasted with the scores of places where the energies of the inspectors extend only to a few milk samples. Mr. Taylor reports that during the year 380 samples have been taken and submitted to the public analyst, as follows, viz:—Milk, 172; butter, 51; coffee, 10; pea flour, 5; cheese, 12; black pepper, 10; white pepper, 10; cayenne, 5; precipitated sulphur, 15; pickles, 10; tea, 10; cream, 5; soda water, 10; beer, 15; brandy, 10; whisky, 10; rum, 10; gin, 10. Total, 380.

Legal proceedings were instituted in 24 cases, and fines and costs were inflicted as under, viz:—Fines, £30 14s. 0d.; costs, £20 2s. 0d.

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WHAT LARD IS.

By H. W. WILEY, CHEMIST TO THE U. S. DEPARTMENT OF AGRICULTURE.

(Continued from page 92).

BUTCHER'S LARD.—The small quantities of lard made by butchers are usually "kettle rendered," after the manner practiced by small farmers in making lard for home consumption. Often the scraps are saved up for a considerable length of time by the butchers before rendering, and that is likely to increase the free acid present. This lard is also frequently dark coloured, and contains a considerable quantity of glue. In New York this lard is known as "New York City Lard."

COMPOUND LARD.—The term refined lard had long been used to designate a lard composed chiefly of cotton oil and stearine. The largest manufacturers of this kind of lard have now abandoned this term and are using the label "lard compound" instead. This is but just to the consumers of this article, who are likely to be misled by the term refined lard. The prime steam lard in a state of fusion, the stearine also in a liquid condition, and the refined cotton oil are measured in the proportions to be used and placed in a tank at a temperature of 120deg. to 160deg. F.

In this tank the ingredients are thoroughly mixed by means of paddles operated by machinery. After mixing, the compound lard passes at once to artificial coolers, where it is chilled as soon as possible. It is thence run directly into small tin cans or large packages, and prepared for market.

PHYSICAL PROPERTIES OF PURE LARD.

(The degrees of temperature referred to herein are Centigrade.)

SPECIFIC GRAVITY.—The specific gravity of a pure lard varies rapidly with the temperature. It is not convenient to take the specific gravity of a lard at a lower temperature than 35 deg. or 40deg., inasmuch as below that temperature solidification is apt to begin. The specific gravity, therefore, is usually taken at 35deg. or 40deg., or at the temperature of boiling water, viz., 100deg. At 40deg. the specific gravity of pure lard is about .890, and at 100deg. about .860 referred to water at 4deg. The specific gravity of pure lard does not differ greatly from that of many of the substances used in adulterating it, but it is distinctly lower than that of cotton oil, and is of great distinctive value in analysis.

MELTING POINT.—The melting point of a pure lard is a physical characteristic of great value. The melting point of the fat of the swine varies with the part of the body from which it is taken. The fat from the foot of the swine appears to have the least melting point, viz., 35.1deg. The intestinal fat seems to have the highest, viz., 44deg. In fat derived from the head of the animal the melting point is found to be 35.5deg., while the kidney fat of the same shows a melting point of 42.5deg.

In steam lards, representing the lards passed by the Chicago Board of Trade, the melting point for ten samples was found to vary between 29.8deg. and 43.9deg. In general it may be said that the melting point of steam lards is about 37deg., which is the mean of the ten samples examined. In pure lards derived from other localities the melting point was also found to vary. A sample of lard from Deerfoot Farm, Southborough, Mass., was found to have a melting point of 44.9deg., while a pure lard from Sperry and Barnes, New Haven, Conn., melted at 39deg. The mean for eighteen samples was 40.7deg.

While the melting point cannot be taken as a certain indication of the purity of a lard, nevertheless a wide variation from 40deg. in the melting point of a lard should lead at least to a suspicion of its genuineness, or that it was made from some special part of the animal. Perhaps one reason why the melting point has not been more highly regarded by analysts is because of the unsatisfactory method of determining it; but when it is ascertained by the method used in these investigations it becomes a characteristic of great value.

COLOUR REACTION.—The coloration produced on pure lard by certain reagents serves as a valuable diagnostic sign in the analysis of lard and its adulterations. Various reagents have been employed for the production of characteristic colours in fats, but of these only two are of essential importance. They are sulphuric and nitric acids. Pure lard when mixed with sulphuric and nitric acids of the proper density, as indicated hereafter, gives only a slight colour, which varies from light pink to faint brown.

The variation produced in the colours by pure lards is doubtless due to the presence in various quantities of certain tissues of the animal other than fat. For instance, a variation in the amount of gelatinous substance mechanically entangled with the lard or of the tissues composing the cells in which the lard was originally contained would be entirely sufficient to account for the slight differences in colour produced by lards of known purity. It might, therefore, be difficult to distinguish accurately between a pure lard containing a considerable amount of other tissues from the animal and one which contains a small amount of adulteration.

The coloration produced, therefore, by the acids named should not be relied upon wholly in distinguishing pure and adulterated lards, but the character of such coloration should be carefully noted in the analyst's book. In the steam lards examined some of the remarks describing the coloration produced are as follows: "Trace of colour," "faint pink," "bright pink," "light red," "yellowish," etc. For pure lards of miscellaneous origin some of

the descriptions are as follows: "Brownish-pink," "trace of yellow," "marked red-brown," "no colour," "slight coloration," etc.

There are many other hog fat products not used in the manufacture of lard or compound lard, a description of which may prove useful here.

WHITE GREASE.—This grease is made chiefly from hogs which die in transit, by being smothered or frozen. Formerly it was also made from animals dead of disease, but this has been diminished on account of certain State laws requiring the carcasses of hogs which have died of cholera to be buried. This grease is made from the whole animal with the exception of the intestines. The latter are rendered separately and made "brown grease." The rendering is done in closed tanks at a high pressure. The residue is used in the manufacture of fertiliser. White and brown grease are used chiefly in the manufacture of low grade lard oils and soap.

YELLOW GREASE.—Yellow grease is made by packers. All the refuse materials of the packing houses go into the yellow grease tank, together with any hogs which may die on the packers' hands. Yellow grease is intermediate in value between white and brown. It is used for the same purposes.

PIG'S FOOT GREASE.—This grease is obtained chiefly from the glue factories, and is used for making lard oils and soap.

STEARINE.—The stearines are the more solid portions of the animal fats remaining after the more fluid portions have been removed by pressure. The stearines used in the manufacture of compound lard are lard stearine, derived from lard, and oleo-stearine, derived from a certain quality of beef tallow. Cotton-oil stearine is used chiefly in the manufacture of butterine.

LARD STEARINE.—The lard stearine used in compound lard is made as follows: The prime steam lard, if properly crystallised and of the right temperature (from 45 to 55deg. F., winter; 55 to 65deg. F., summer), is sent at once to the presses. If not properly grained it is melted and kept in a crystallising room at 50 to 60deg. F. until the proper grain is formed. The lard is then wrapped in cakes with cloth, each cake containing 10 to 20 pounds. The cakes are then placed in a large press, with suitable septa to facilitate the egress of the oil. These presses are sometimes 40 to 50 feet in length, and when first filled 12 to 18 feet high. The pressure is applied very gradually at first by means of a lever working a capstan, about which the chain is wrapped, attached to the upper movable part of the press.

The oil expressed, prime or extra lard oil, is used for illuminating and lubricating purposes. The resulting stearine is used for making compound lard, and is worth more than the lard. It has about 5 per cent. free fatty acid (less than the lard oil), and crystallises in long needles, making the texture tough.

OLEO-STEARINE.—This product is made chiefly from the caul fat of beeves. This fat is rendered in open kettles at a low temperature. The resulting tallow is placed in cars in a granulating room, where it is allowed to remain for 36 to 48 hours at a temperature of 80 to 90deg. F. The contents of the cars are then mixed and placed on a revolving table, where they are made into cakes. These are wrapped with strong cotton cloth and placed in a strong press, where a pressure of 90deg. F., becoming very strong at the end, is applied for one or two hours. The expressed oil, known as oleo-oil, is used in the manufacture of butterine. The stearine is removed from the press as white, hard cakes, and is used for adulterating lard. The oil is sometimes filtered with a small percentage of Fuller's earth to improve its colour and brightness.

MUTTON TALLOW.—A fine article of mutton tallow is also sometimes used in lard, but the objection to the flavour is sufficient to limit its use to a small amount.

THE FOOD VALUE OF SUGAR.

DR. VAUGHAN HARLEY has given the chemical reasons that led him to believe that sugar was the principal factor in the production of muscular energy. He has also proved that it could be experimentally demonstrated that the addition of large quantities of sugar to the diet caused an increased capability of doing muscular work. By means of the ergograph it was possible to estimate the amount of work accomplished under various circumstances by the middle finger of each handweights of three kilogs. and four kilogs. being raised. The total height to which the weight was lifted, being multiplied by the weight used, expressed in kilogrammes-metres the amount of work accomplished. The first step was to ascertain the value of sugar when taken alone in the production of muscular work. During a twenty-four hours' fast on one day, water alone was drunk; on another, 500 grammes of sugar was taken in an equal quantity of water. It was thus found that the sugar not only prolonged the time before fatigue occurred, but caused an increase of 61 to 77 per cent. in the muscular work done. In the next place, the effect of sugar added to the meals was investigated. The muscle energy-producing effect of sugar was found to be so great, that 200 grammes added to a small meal increased the total amount of work done from 6 to 39 per cent. Sugar—250 grammes—was now added to a large mixed meal, when it was found not only to increase the amount of work done from 8 to 16 per cent., but increased the resistance against fatigue. As a concluding experiment, 250 grammes of sugar was added to the meals of a full diet day, causing the work done during the period of eight hours to be increased 22 to 36 per cent.

ANALYSES OF PROPRIETARY MEDICINES.

LACTO-PEPTIN.

By H. W. SNOW, P.H.C.

Lacto-Peptin claims to be a happy combination of the chief digestive agents of the alimentary canal, and in proportions practically the same as they occur in the human system. This is a good handle to use commercially, but physiological chemistry has some long strides to make before it can yet furnish data making such a preparation even partially true to any such claims. The proprietors give a formula for their article; and, desiring to know something more regarding it, I made a preparation of a good quality of pepsin, pancreatin, diastase, lactic and hydrochloric acids, and sugar of milk, in the proportions claimed for Lacto-Peptin. I then made a series of comparative tests between this article and the proprietary preparation, and found by strictly parallel work that in digestive power on albumen it contained a pepsin of about 1 to 500 power, against 1 to 100 pepsin used in the sample made by myself. In its action on milk it was less than one-twentieth as strong as the check sample, and in its action on starch paste equally unsatisfactory. The natural inference from the work done forces a conclusion that it contained no pancreatin worthy of the name, is, practically speaking, a very ordinary quality of saccharated pepsin for which you are asked to pay 10dols. a pound when labelled Lacto-Peptin. The same company puts up a so-called solution of Lacto-Peptin, said to contain 32 grains of lacto-peptin per fluid ounce. Using enough of this solution to correspond to $\frac{1}{4}$ grain of pure pepsin, and trying its solvent power on egg albumen, showed that it practically had none, while a solution of the check sample, made as nearly like the "patent" as was possible, gave good results. Still another preparation of this company is the Syrup of Lacto-Peptin and Phosphates. It is said to contain lacto-peptin and 8 grains each of the phosphates of lime, iron, potash, and soda. The taste of the article alone is sufficient evidence of the falsity of this claim, as it is a chemical impossibility to put in calcium phosphate in that proportion without an acidity much greater than that of the "patent." An estimation of the combined phosphates of lime and iron showed only about one-half grain per fluid ounce.

THE HILLS ARE GREEN FAR OFF.

THE Kent County Council have once more exemplified the adage that a prophet has little honour in his own country. Dr. M. A. Adams is known throughout the civilised world as the discover of the method of milk analysis. Mr. F. C. Lloyd is known in a limited circle as the discover of the "eight per cent. water-herd of cows," the figures of which analysis we have so often asked for in vain. It is not unfair to Mr. Lloyd, nor would it be to far abler men, to say that Dr. Adams could teach him accuracy of analytical observation now as he taught him, along with the rest of the scientific world, accuracy in analysis years ago. The following from the *Kentish Express* therefore reads as strange to us as it will to our readers. The Kent County Council met, and it was stated with respect to the Fertilisers and Feeding Stuffs Act, 1893, that "The Committee have considered the appointment of a fit person to be district analyst under the Fertilisers and Feeding Stuffs Act, 1893. The Agricultural College at Wye have recently appointed as their analyst for one year, Mr. Lloyd, F.C.S., F.I.C., and in consideration of the advantage to be gained by the work being done at the College Laboratory they have made an offer to contribute towards the expenses of the analysis in the event of the Council appointing Mr. Lloyd as their analyst. The Committee are perfectly satisfied that Mr. Lloyd is a chemist of great knowledge, skill, and experience, and recommend that he be appointed for the term of a year, with a retaining fee of 25 guineas, and a fee of £1 ls. for every full analysis of samples, and a fee of 10s. 6d. for each sample requiring a single determination only. The Committee recommend that every buyer of fertilisers or feeding stuffs in the county shall be entitled to Professor Lloyd's services, on payment, for a full analysis of a fee of 5s., and for a single determination on payment of 2s. 6d. One-half of the residue of these fees will be paid by the College, and the other half by the County Council."

We do not know if their public analyst, Dr. Adams, refused, or was offered this appointment; or if the Kent County Council have been stuffed with the nonsense that there are only some three or four public analysts who know how to analyse manures or cattle foods, but we do know that Dr. Adams would never perform the astounding feat of 'discovering a herd of cows that yielded eight per cent. of water in their milk without giving the scientific world the figures to substantiate the statement.

RAW MILK AND TYPHOID.

IN a report to the Broughty Ferry Police Commission on the outbreak of typhoid, Dr. Littlejohn says that it originated in the distribution of infected milk from the dairy in Links Cottages. The outbreak had been remarkably localised, 28 cases occurring within a radius of 200 yards from the dairy. The defective sanitation of the area in question was the cause of the first outbreak, and also of the second outbreak at the beginning of this month. He condemns the ashpit storage of refuse, etc. The dairy is now closed as such, and though it has been drained and trapped, the owner was lying ill of typhoid on the premises.

WHAT IS VINEGAR?

MR. A. H. ALLEN in his annual report to the West Riding County Council deals exhaustively with the question of the adulteration of vinegar, and the difficulties experienced by analysts in certifying samples of the article. Mr. Allen says:—Analyses have shown that adulteration of this article has been extensively practised; but much difficulty has occurred, owing to the absence of any authoritative definition of the term "vinegar." It cannot be contended that the origin and strength of all commercial vinegar is to be regulated by the narrow definition of the British Pharmacopoeia, nor would anyone contend that the term should be limited to wine which has undergone acetification, as the name, *vin aigre*, implies. A wider and generally more acceptable definition is that "vinegar is an acid liquid obtained by the alcoholic and acetous fermentation of a vegetable juice or infusion." This leaves it open to the manufacturer to make his vinegar from wine, cider, raisins, malt or other grain, and perhaps sugar or molasses; but it excludes the various forms of distilled acetic acid, of which the so-called "pyroligneous acid," obtained by the distillation of wood, is a type. This distilled acetic acid, which is wanting in the flavour and other essential characters of true fermentation vinegar, has been largely used for the adulteration of vinegar, and some firms, known as "vinegar-fakers," have, with the aid of an assortment of second-hand tubs and other plant of a similar simple character, coloured this pyroligneous acid and sold it to the public as genuine vinegar. Such an article bears much the same relation to true vinegar that silent spirits bear to genuine wine.

By means of pyroligneous acid a "vinegar-faker" can concoct a factitious vinegar at a cost of something less than 1½d. per gallon, and if he substitutes sulphuric acid he can make a "vinegar" at a cost of 2d. per 100 gallons. At one time the addition of sulphuric acid to vinegar was very common. It is not a fact, as sometimes alleged, that it was ever a legal addition. Before the abolition of the vinegar-duty in 1844, vinegar was taxed according to its strength, as ascertained by its capacity to neutralise alkali, and the Excise used not to charge any duty on the sulphuric acid then commonly added with the view of preserving the vinegar, providing such acid did not exceed one part per thousand. Whatever justification there was for the addition of sulphuric acid to the badly-made vinegar of that period, there is now not the slightest excuse for its employment, and it is very rarely met with except in the article vended by one notorious "vinegar-faker," in whose product it is to be found to the extent of over one quarter. Just as the beer-brewer has found that an equally good or better beer can be brewed by using a mixture of malted and unmalted grain, so the vinegar-brewer has found it an improvement to substitute unmalted grain for a portion of the malt formerly employed. This being the case, and it being impossible at the present time analytically to distinguish between a vinegar brewed wholly from malt and one brewed from a mixture of malted and unmalted grain, the great majority of analysts have held that an article prepared in the latter manner complied sufficiently nearly with the definition of malt vinegar. But there are prominent vinegar-manufacturers making excellent vinegar who greatly reduce the proportion of malted and unmalted grain, and employ sugar and molasses as the leading materials for the manufacture of their vinegar, subsequently selling this mixed article as "malt vinegar." It is contended on their behalf that such a vinegar keeps better than one brewed wholly from grain, and that so long as the analyst cannot recognise the difference they have a right to call anything malt vinegar, even if the malt be wholly omitted from the materials of its manufacture. As there are four or five firms who brew a vinegar wholly from grain, it appears unfair that manufacturers of a mixed article should take advantage of the popular taste or preference for malt vinegar while supplying an article prepared chiefly, if not wholly, from other sources. Mr. Allen states that several samples of vinegar largely manufactured from sugar had been declared by the chemists at Somerset House to be malt vinegar. He sent a sample to Somerset House, which the manufacturers privately admitted to contain a large proportion of pyroligneous acid, and it was certified by the analysts to be genuine malt vinegar.

Three Highest Awards, Chicago, 1893.

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HOW BEER IS ADULTERATED.

THE following extracts from transactions of the Institute of Brewing are portions of a lecture given by Mr. Salamon. They are interesting as showing the results of Sir Algernon's West's ignorance and Mr. Gladstone's folly in transferring the duty from the malt to the wort. It should be remembered that despite this enormous saving to the brewer, the price of beer to the publican who rents a tied house and to the public is the same as when beer was the product of malt and hops, and was far stronger than it now is. Mr. Salamon says:—

The question of raw-grain conversion is comparatively new to English brewers, for it was not until the year 1880, when the transfer of duty was made from malt to wort, that any such process was possible; indeed, it was expressly forbidden, as we shall see by glancing at the statutes controlling the operations of the maltster and the brewer. It is essential to bear in mind that this prohibition was exercised exclusively for fiscal reasons, and did not in any way contemplate injurious effects resulting from raw-grain conversion, nor was it because the use of raw-grain was regarded in the light of adulteration. It is important to bear this in mind, lest the point should be emphasised by pure beer advocates. In such a case, the answer is sufficiently contained in the fact that, at the present moment, such processes are under the direct sanction of the law.

In the year 1821, we first find it enacted that brewers shall enter, in a book delivered by the Excise officer, the quantity of malt intended to be used in the next brewing; and it was then further directed that the grains were not to be removed until gauged and taken account of by the officer. Of the duty collected under this and previous Acts, a very considerable proportion had been diverted to the Privy Purse. This custom dated back as far as Charles II., and the income thus derived was termed "*the hereditary beer duty*." This duty was repealed in the year 1830, and the sovereign was proportionately compensated. It was deemed advisable to bring about this change in order to concentrate the Excise laws, and render them easier in working. As a result of the appeal, and in the same year, namely, 1830, brewers were compelled to pay their license duty in proportion to the quantity of malt used by them in brewing. Practically, then, it may be stated that the malt-tax dates from that year. As soon as the brewer was taxed in terms of malt, the most stringent precautions were found necessary to prevent evasion of the law. Brewers were compelled to make entry of all premises and utensils used for brewing or storing of beer and malt, and the Excise officers had the right to enter any buildings, at any time, for the purpose of inspecting or taking an account of the beer or malt stored. There was a distinct proviso forbidding the employment of raw-grain or even its storing in the brewery premises, and this section of the Act is so important as bearing upon my argument that I purpose quoting it in full. It is as follows:—

"And be it further enacted, that it shall not be lawful for any brewer of beer for sale in the United Kingdom to have in his or her brewery, or in any part of the entered premises, or in any mill connected with such brewery or entered premises, any raw or unmalted corn or grain whatsoever, either whole or unground, or ground or bruised, and that all raw or unmalted corn or grain, whether whole or unground, or ground or bruised, which shall be found in such brewery or premises or mill, and all malted corn or grain, whether whole or unground, or ground or bruised, with which such raw or unmalted corn or grain may have been or shall be mixed, shall be forfeited and may be seized by any officer of Excise, together with all sacks, casks, vessels, or packages in which such raw or unmalted corn or grain shall and may be contained, or in which such raw and unmalted corn or grain, and the malted corn or grain with which the same may or shall have been mixed, shall or may be continued. And every brewer shall, for every such offence, forfeit the sum of £200."

This Act continued in force, although during the year 1847 a further Act was passed permitting brewers to use sugar in the brewing or making of beer. The collection of duty in terms of malt used led, notwithstanding, to much fraud and deception, and for fiscal reasons again, it was found expedient to pass a more stringent Act to prevent the possibility of employing raw grain. This was in the year 1855. The enactment is contained in 18 and 19 Vict., cap. 94, sec. 36, and again it is interesting to follow the exact wording:—

"And for preventing fraud and evasion of the duty of Excise on malt by the use of raw or unmalted corn or grain in the brewing of beer for sale, be it enacted that it shall not be lawful for any brewer of beer for sale to have in his brewery or in any premises belonging or adjacent thereto, whether the same shall be entered by him or not, any raw or unmalted corn or grain whatsoever, either whole or unground, or ground or bruised, except corn or grain not ground or bruised being in premises entered by such brewer for the purpose of making malt, and all raw or unmalted corn or grain which shall be found in such brewery or other premises except as aforesaid, and also all malted corn or grain, whether whole or unground, or ground or bruised, with which such raw or unmalted corn or grain may be mixed, shall be forfeited, and the brewer for every such offence shall forfeit the sum of £200."

Section 37 enacts:—

"That no brewer of beer for sale shall have or use, for the purpose of grinding, crushing, or bruising malt, any mill-stones, or any mill constructed otherwise than with metal rollers only, such rollers not being fluted but having plain and smooth surfaces, and

no malt which shall be ground by any means or crushed or bruised otherwise than by means of such metal rollers as aforesaid, shall be used by or be received into the possession of any such brewer."

The penalty in this case was a forfeit of £200. The object of this section was to prevent barley or other raw grain being ground with malt, it being known that in such case smooth metal rollers would be unfit for the purpose, and that either fluted or stone mills would be necessary. Precautions were further taken to prevent raw grain passing into the brewery under the style of roasted malt, and according to the instructions given to the Excise officers, it was not deemed malted if the plumule of 95 per cent. of it did not extend one-half the length of the grain. The preparation of roasted malt was also strictly under Excise supervision.

The Acts above alluded to remained in force until the year 1880, when, by the well-known Free Mash Tun Act, the duty was transferred from the malt made to the wort produced and gathered.

Thus it will be seen that whatever merit may attach to raw-grain processes, it is only within the last thirteen years that the English brewer has been enabled seriously to consider them; and therefore in this particular case the familiar phrases in which the words conservative and prejudice figure so prominently do not apply. Indeed, the brewer has not been slow to avail himself of the privileges derivable under the new Act, and it was not long before he was found to be seriously considering the advisability of employing starch in some form other than malt. It is quite recently, however, that a fresh impetus has been given to the whole question, which is one of sufficient importance to merit our close attention.

The amount of starch which the brewer can obtain from a given weight of material employed will obviously determine his extract, and it is found that although the proportion of starch in any one class of seed is remarkably constant, considerable variation exists among the various plants. Thus we have the following data supplied by O'Sullivan:—

Barley	...	...	46	per cent.
Maize	...	...	54 to 58	"
Rice	...	...	75 to 77	"
Oats	...	...	35 to 38	"
Wheat	...	...	54 to 55.5	"

It will be seen that barley, which is chiefly employed by the brewer, is much inferior in starch proportion to maize, and contains vastly less starch than rice. These differences become emphasised when maize and rice are prepared for the use of the brewer—that is to say, when the seeds are properly husked and the germ removed. When ready for the mash tun, we may take it that malt averages between 68 to 70 per cent. of carbo-hydrate other than cellulose, and that prepared materials from maize and rice yield from 81 to 83 per cent. Hence it is that whereas malt yields an average extract of about 90; maize and rice, if properly prepared, will give a theoretical carbo-hydrate extract of about 105lbs. It is clear then that, weight for weight, a far better yield is obtainable from rice and maize than from barley.

In view of the large saving, and of the beneficial effects attendant upon the use of rice and maize preparations, many attempts have been made to devise methods which should permit of the admixture of a largely increased percentage of these materials. Hitherto the apparatus designed have not been successful, at least in this country, although I am aware that some brewers have employed methods of their own with a considerable measure of success. The more one studies the question, the more is conviction forced upon one that the problem is extremely difficult. It is, however, well worth fighting for, because if by the present methods the limit of raw-grain that can be employed is 20 per cent., and the saving in that case is large, it follows that if 50 per cent. of a material which has not to be prepared, or flaked, can be used, the saving will be proportionately greater. This question of £ s. d. has inspired Mr. Billings to produce the most perfect machine at present known, and I have no hesitation, as the result of prolonged study of the apparatus and the method of working it, in stating that by its use 50 per cent. of maize or rice can be incorporated with the malt without the slightest injury attaching to the resulting beer.

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HE SHOULD PROSECUTE THE WHOLESALE DEALER.

At Belfast on March 13th, Inspector M'Master summoned Joseph Murdock and Sarah Murdock, 290, York-road, for having sold margarine as butter on the 12th inst. Mr. D. F. Spiller prosecuted, and Mr. W. Young defended. The inspector stated that on the day in question he entered the defendants' shop and saw a large lump of what appeared to be butter on a dish on the counter. He purchased a pound and a half from Mrs. Murdock, for which he paid 1s. 2d. per lb. Witness then told her that he had bought it for the purpose of analysis, and she replied that so far as she knew it was pure butter. Professor Hodges certified that the article was not pure butter. For the defence, it was contended that the defendant was a spirit grocer, and was not in the habit of dealing in margarine. He stated that he had bought it as butter from a wholesale merchant, and had sold it under that belief. A fine of £5 was imposed.

ANOTHER YEAST PROSECUTION.

The courts have recently been treated to such strange expert testimony that there is little wonder that expert testimony as to what is or is not adulteration is rapidly coming to be treated with contempt. It has ceased to be respectably farcical. We therefore hail the advent of an expert with a touch of Rabelaisian humour about him. It is not given to every man, God wot, as old Pepsys was fond of saying, to furnish cause for broad grins, but Mr. Jago has done it, and that right well. Whether he would have been as successful had there been any expert present to expose his tongue's flesh cheek, is a matter we have our doubts about. At the Ystrad Police-court (Rhondda Valley), on March 19th, John Davies, grocer, Clydach Vale, near Pontypridd, was summoned for selling German yeast containing, according to the analyst's certificate, 80 per cent. of genuine yeast and 20 per cent. of potato and rice starch. Mr. Phillips conducted the prosecution on behalf of the Deputy Chief Constable of Pontypridd, and Mr. Rowlands appeared for the defendant. —The Stipendiary: What is German yeast?—Mr. Rowlands: It is yeast pressed from the yeast cells. I take a legal objection, namely, that yeast is not food within the meaning of the Food and Drugs Act. I have got an analyst here. If you don't dismiss the case on the legal point, I will call Mr. Jago to prove the great benefit derived by mixing yeast with the ingredients referred to. The Stipendiary remarked that the magistrates were agreed that German yeast was not food if baking-powder was not food, and that point had been decided recently. German yeast was an article used for raising bread or aerating bread, and baking-powder was used for a similar purpose. The Bench were disposed to think that both cases were about the same, legally speaking. But for the opinion of the higher court, the magistrates would no doubt think the articles were food. The Bench might be wrong in their decision. The learned Stipendiary further remarked that the defendant might wish to show that the German yeast was an article well known in the trade by that name. If he could prove that he would have a second string to his bow.—Mr. Rowlands said that would come under sub-section 6 of the Food and Drugs Act.—The Stipendiary: You may prove that you were applied to for German yeast, and you supplied what is known in the trade as German yeast.—Mr. Rowlands: I can examine Mr. Jago, analyst, at great length on the real merits of the case. Mr. Jago was then sworn. He was the chemist of the Non-Associated Master Bakers and Confectioners of Great Britain, and was the author of a book which was considered a standard work on the subject.—Mr. Rowlands: Have you given the subject of yeast your closest attention for years past?—Yes, very close attention for the past ten or twelve years. Mr. Rowlands: German yeast as well?—All sorts of yeast.—Mr. Rowlands:

I think you have publicly expressed your opinions upon the question?—Yes, on several occasions with respect to the chemistry of starch and of yeast. I have known this very brand for eight years.—The Stipendiary: What is the brand?—Mr. Rowlands: "Hong Ko."—Mr. Phillips: We have had no evidence before us as to what brand it was.—Mr. Rowlands (resuming): Now, Mr. Jago, what is the effect of the addition of starch to the yeast?—The effect of purifying the yeast. The yeast afterwards keeps better and stands a rougher usage especially, and is better for transit. It becomes very much drier.—Mr. Rowlands: Does the starch replace the water?—Mr. Jago: It replaces water to the extent of 12 or 15 per cent.—Mr. Rowlands: Then it follows that the addition of starch adds to the weight of the yeast?—No, not to a great extent. Taking the sample of yeast as that which has just been examined here, the analyst's report shows that it contains 20 per cent. of starch. I should say that the addition to weight, owing to the replacement of water by starch, would be 5 per cent. That is based upon analyses made from many samples.—Mr. Rowlands: Have you analysed mixed and unmixed yeast?—Yes, and the result showed that the starch had dried the yeast to the extent of 12½ per cent.—Mr. Jago, in reply to the learned Stipendiary, remarked that he considered that no line of demarcation could be drawn as to the quantity of starch that should be used in the production of yeast, but he thought that 10 per cent. beyond what was regarded as necessary in the manufacturing of the article was a fair limit. The increase to that limit would not prejudice the customer in the slightest degree; in fact, it would be a distinct advantage to him.—Mr. Phillips: What effect has the potato starch upon the yeast?—It simply makes the yeast so much drier and to stand the heat better, and the character of the yeast was improved by it. The excess of water in the yeast is injurious to the sale of the article.—The learned Stipendiary (to Mr. Phillips): Have you any evidence to contradict this?—No, I have no evidence. Mr. Jago: I can give you scientific authorities who hold similar views to myself on the matter.—Mr. Phillips (cross-examining): I take it that German yeast is sold pure as well as mixed?—Mr. Jago: It is sold with water in it. There is no such thing as pure yeast—that is impossible to manufacture; it must contain water.—Mr. Rowlands: And the object of using starch is to replace some of the water?—Mr. Phillips: Do you know Janzen and Co.?—Mr. Jago: I don't think I do. I don't know about their brand.—Mr. Phillips: You say that was sold as pure German yeast?—That is so.—Mr. Phillips: The public analyst says in his certificate that it contains 20 per cent. of starch?—Mr. Jago: Yes, and 80 per cent. of genuine yeast, which is absolutely a fallacy. That is simply absurd. All samples of yeast contain water, or starch and water.—Mr. Phillips: What is the use of the starch in the yeast?—To preserve the vitality of the yeast. The starch used by the manufacturers costs 6d. per lb. The customer was not by any means defrauded.—The Stipendiary remarked that it was useless carrying the case any further. It was the opinion of Mr. Jago that the ingredients had not been added to increase the bulk, and that the yeast was better as an article of commerce with the starch added to it. That being so, and his evidence not having been contradicted, it was no use proceeding further with the case. There was no scientific person present to contradict him. The persons who took up the prosecution should have engaged a scientific man or expert to give evidence upon the matter in order to have the two sides of the case. At present there was only one side before the Bench. The magistrates must therefore give decision in favour of the defendant upon the two legal points of the case.—Mr. Rowlands asked for costs for Mr. Jago, stating that he had travelled from Brighton to give evidence.—The Stipendiary inquired if an intimation had been given to the prosecution that Mr. Jago was to be called to give evidence.—Mr. Rowlands: Is it necessary to disclose one's case before going into it?—The Stipendiary: It is *prima facie* evidence against you.—The Deputy Chief Constable stated that no intimation had been received by him.—The Bench refused the costs applied for.

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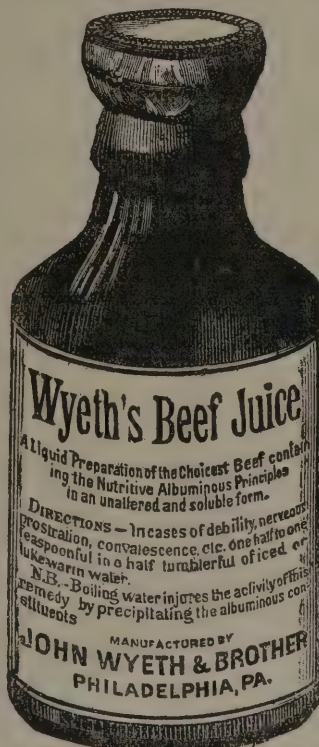
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THE BEEF STEARINE IN LARD CRUSADE.

THE MERCHANDISE MARKS ACTS.

At the Bristol Police-court, on March 20th, before Mr. P. J. Worsley and Mr. A. N. Price, Mr. Alexander Warrick (Messrs. W. Clark and Son) was summoned on two informations laid by John Moore, of county Down, Ireland. The first alleged that the defendant, on September 27th, 1893, unlawfully did sell a mixture designated lard, "Lily," which was guaranteed pure, which trade description was then and there false. The other information stated that the defendant sold to John Moore, and unlawfully applied certain false trade descriptions to lard supplied.—Mr. W. Henderson (Fussell and Co.) prosecuted; and Mr. Clifton appeared for the defendant.—Under section 6 sub-section 2, the clerk explained any person charged could, before the charge was gone into, elect to be tried on indictment.—Mr. Clifton said his client would agree to abide by the decision of the justices.—Mr. Henderson then proceeded to address the Bench, and he stated that the prosecution was instituted by the Bacon Curers' Association of Great Britain and Ireland.—Mr. Clifton objected to this statement, as the prosecution was really instituted by a man named Moore. He was the other day censured in a court for saying that he appeared for the Licensed Victuallers' Association. His friend appeared for the informer Moore, who was the prosecutor.—Mr. Henderson said it appeared that Mr. Clifton had been recently informed, but it was matter of very little moment to him. He would put it that he appeared on behalf of Mr. Moore, and described him as the inspector of the Bacon Curers' Association of Great Britain and Ireland. The object of that Act was to prevent the sale of goods falsely described or sold as to origin of their country, or as to their purity. Lard was the fat of swine simply and solely, and any addition of other ingredients at once made it impure and adulterated. There was one very large and important industry in Belfast and the North of Ireland, and that was the Irish lard trade. There the lard which was manufactured by the genuine Irish lard merchants was notoriously of the purest and finest character; it was second to none, the consequence was the people who produced the genuine lard were entitled to expect that any violation of the Act of Parliament should be met with in a stringent manner. With regard to lard which was imported from America to England for disposal by sale in this country, it was of another character altogether. In America they abstracted the best part of the pig for making margarine or something of that sort, and the rest was done up in tins and imported to this country for refining. The American lard, after the abstraction of the leaf had taken place, left the residue of a very soft, oily, and inferior quality; and the result was when it came to this country it passed through a refining process which was not as a matter of fact necessary. It was possible to extract the oil from the soft American lard; but if that were done it would mean a very serious loss in the percentage of weight, something like 40 per cent. Instead of leaving it pure, certain firms of manufacturers resorted to the expedient of adding a composition of some sort or other, generally speaking it was beef stearine, which was cheaper than the fat of the pig. Sometimes there were other substances, palm nut oil or some other ingredients of the like description. It was then sold at a cheaper rate than the real Irish lard, and the result was that the Irish lard merchants proper were brought into very unfair competition by lard of that nature being palmed off as "guaranteed pure lard." It was matter of common knowledge that the firm of Walkington and Sons, of Belfast, manufactured that adulterated lard. It was the American lard which had gone through the refining or, as he called it, adulterating process before it found its way to the general public. Messrs. Walkington dealt largely, if not solely, in American lard, and they passed it out by giving it the designation "Pure Bladder lard," "Lily brand." It was well known in the trade that the Lily branded lards were impure and strongly adulterated with beef stearine or some other ingredient, and notwithstanding that they sold the lard to the retailers or any number of the general public who bought it with great staring letters attached "Pure Bladder Lard." On September 27th last the defendant sold to Mr. W. R. Steward one barrel of that Lily brand lard, and the invoice which accompanied the barrel, stated—"Bought of William Clark and Son, provision merchants, one barrel lard, 33 lbs. 1d.; guaranteed pure." At the bottom was—"Received from Messrs. Walkington and Sons," which he supposed the defendant would call a warranty. The warranty, however, might affect the Food and Drugs Act, with which the present prosecution had nothing to do. The brand stated that it was pure lard, and the invoice itself gave an absolute guarantee of its purity. That guarantee would be bad under the Food and Drugs Act. On December 5th last Mr. John Moore called at Mr. Steward's place in Cardiff, and saw in the shop window a number of bladders of Lily lard. He went into the shop and asked the price, and purchased one of the bladders from Mr. Steward. He would prove to them that the bladder of lard so purchased was one of the bladders of the "Lily" lard contained in the cask sold by the defendant to Mr. Steward. Mr. Moore forwarded the lard to London for the purpose of analysis, and a portion of it had been analysed, and he would call before them Mr. Otto Hehner and the city of Bristol analyst, Mr. Stoddart, who would prove that such lard was adulterated to a material extent with beef stearine, although as far as the prosecution was concerned, it was immaterial whether it was to a large or small amount. There was another very important point in reference to that case. He must to a certain extent anticipate what the defence would be. On December 4th, previous to the day that he went to Cardiff, Mr. Moore himself called upon Messrs. William Clark and Son, in Victoria-street. He went to the warehouse and found a large number of barrels of Lily brand lard. He agreed to purchase one barrel from the warehouseman, and it was actually rolled out for that purpose. Mr. Moore then went to the office for the purpose of paying, and he asked that the invoice should bear the same description "pure bladder lard" as was on the barrel head. That the defendant declined to accede to, and asked Mr. Moore who he was, and what he wanted there, and what he was going to do with the lard after he had purchased it. The defendant said he was not going to give him any guarantee of its purity, for he knew it was not pure; all in the trade knew what Walkington and Son's lard was, and if any one knew as to its quality he (Moore) ought to be aware of it. He thought if he could establish that whether any warranty or guarantee was attempted to be set up by the defendant, the sale was made with the full knowledge that the lard was impure; and, therefore, whatever warranty they had would not apply.

Evidence was then taken.—Mr. Steward said he was formerly of the Central Stores, Castle-road, Cardiff. On September 27th he purchased a barrel of lard of the defendant, and he had an invoice, but not the original invoice, which had been destroyed. He did not remember what was on the original. In consequence of a communication he came to Bristol, and saw Mr. Henderson towards the end of February. After a conversation with him he went to the warehouse of the defendant. Showed him a letter which he had received from Mr. Henderson, and told him the original invoice was destroyed, and asked him to let him have a copy.—Mr. Clifton objected to the copy being received.—Witness, in answer to further questions, said the words "guaranteed pure" were not, to the best of his recollection, on the original invoice. That was the first purchase of lard he had made at William Clark and Son's. There was a blue stamp on the bladders.

Mr. John Moore was next called. He said that he lived at St. Leonard's, county Down. On December 5th, he went to Cardiff, and visited the shop of Steward. He had observed bladders of lard, with a printed ticket on them, in the window. He knew what they were from

the mark, Lily brand lard, manufactured by Walkington and Sons, Belfast. He purchased a bladder containing 41 lbs. at 7½d. per lb., which came to 2s. 10d. He believed pure Belfast lard at that time was about the same price. On December 4th he went to the defendant's warehouse and bought some lard. He saw the defendant at the office, and defendant said he would give him no guarantee, as a number of prosecutions had taken place over the country, and it was well known that the American lard was not pure, and witness ought to know it. He would not sell except he held Walkington and Sons responsible for anything he found wrong. Witness said, "If you don't sell, another will," and he left. He knew that Walkington manufactured in Belfast, and the lard was American.—Mr. Clifton objected to this.—The magistrates remarked that it might be a matter of common repute that the firm of Walkington and Sons manufactured the lard.—The Clerk: As any man from Cheddar might come and say, "This cheese is not Cheddar; it is American."—Witness: I have bought the lard in Belfast as American lard.—In further examination the witness said the Lily brand was American lard. He had taken proceedings against Walkington for infringement of the Merchandise Marks Act.—The Clerk: You must not go into this.—Mr. Clifton: You may ask him if the proceedings were not scouted out of court.—In cross-examination the witness said he would take no guarantee from the defendant, except he would say on the invoice it was pure lard.

Mr. Henderson decided to call the defendant, Mr. Warrick, as a witness. He said that he traded as William Clark and Son, as a provision merchant, in Victoria-street, Bristol. He could not in respect to the description of the lard sold to Mr. Steward say more than what appeared on the label. He purchased lard from Walkington. The transaction of September 27th was the only one he had with Steward for lard. He kept no exact copy of the invoice. He was guaranteed by Walkington, and he passed on the same guarantee to Steward. He helped Steward out of his difficulties by giving him all the guarantees he possibly could. Steward said he was going to give up the copy of the invoice to Messrs. Fussell and Co., and he gave Steward what guarantee he had. That paper produced was not an exact copy at all of the original invoice. Walkington's agent said he would be safe in putting "guaranteed pure."—The Clerk: The stuff sold by Steward to Moore was what he is said to have received from the defendant in a barrel on which these words appeared, "Guaranteed pure."—Mr. Clifton said there was no guarantee of the quality; he submitted there was no case at all.

Mr. Otto Hehner, 11, Billiter-square, London, said he was public analyst for West Sussex, the Isle of Wight, and other places. He maintained that it was not necessary to add beef stearine to lard. It had become the habit of late years to add beef stearine more or less to American lard for certain reasons. To the best of his knowledge there was 20 per cent. of beef stearine present in the lard in question; certainly more than 10 per cent.

Mr. F. W. Stoddart, public analyst of Bristol, corroborated the evidence of Mr. Hehner.

Mr. Clifton, on behalf of defendant, then submitted the identical barrel was not produced in which Steward had the bladders, and there was no legal evidence that the head of the barrel said to contain the description of the lard had been lost or destroyed. Therefore, secondary evidence was inadmissible as to what the head of the barrel contained. He would ask the court to say "guaranteed pure" were not on the barrel in the absence of the evidence.—Mr. Henderson said he had been misled by a copy of the invoice, which was furnished by the defendant.

The magistrates decided to dismiss the summons without costs.

At Aberdare Police-court on March 20th, Thomas Roberts, grocer, Lewis-street, Aberdare, was charged with selling lard adulterated with beef fat. Mr. P. T. Rhys prosecuted on behalf of the police, who were instructed by the clerk of the County Council.—Inspector Jennings gave evidence of the purchase of the lard, and produced the certificate of the analyst, showing that the lard contained an admixture of 16 per cent. of beef fat.—For the defence, the defendant swore that he bought the lard from Messrs. Durden and Company, of Liverpool, as pure lard, and produced his invoice, on which it was described as "pure bladder lard." Each bladder was also stamped by the refiners, "guaranteed pure."—Mr. P. T. Rhys for the prosecution, urged that the words on the invoice were not a sufficient warranty under the section, and quoted a case to support his contention.—Mr. North, however, said that there was a later case than the one he had quoted, and Mr. Kenshole, for the defence, pointed out that in a case decided in October last, *Lake v. Wilson*, it had been held that a description on the invoice of the kind that was given in this case was a sufficient warranty.—The Bench upheld the contention of Mr. Kenshole and dismissed the summons.—On the application of Mr. Rhys they ordered the invoices to be impounded, with the view of taking proceedings against the manufacturers.

HUGH POWELL was then summoned for a like offence. The lard in this case was certified by the analyst to contain 12 per cent. of beef fat. The only difference in this case and the previous one was that the invoice only described the lard as "Ruby" lard, and that each bladder was marked "Guaranteed pure Ruby." The Bench, after a short consultation, held that this was not a sufficient warranty. Had each bladder been labelled "Guaranteed pure lard," they would hold it was sufficient. A nominal fine of 5s. and costs was inflicted, Mr. North stating that they exonerated the defendant of all intention to defraud, and granted Mr. Kenshole a case for appeal.

WILLIAM PARRY, Lewis-street, Aberdare, was summoned for a similar offence, the lard in this case being certified to have contained 20 per cent. of beef fat. Mr. Thomas Lloyd, who had sold the lard to Parry, produced the invoice he received with the lard, in which it was described as pure bladder lard. This case was also dismissed, as well as a case against John Prosser and Co., Lewis-street, Aberdare.—The Bench ordered the warranties in the three cases to be impounded, with the view of further proceedings.

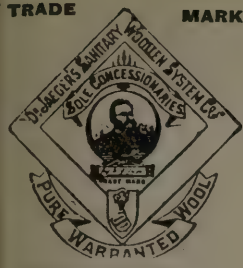
POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
Powell's Balsam of Aniseed—Coughs and Bronchitis.
Powell's Balsam of Aniseed—Coughs and Hoarseness.
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Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
Powell's Balsam of Aniseed—Coughs.—Established 1824.
Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
Powell's Balsam of Aniseed—Coughs Relieved Instantly.
Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
Powell's Balsam of Aniseed—Coughs.—Trade Mark.
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or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

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Food and Sanitation.

SATURDAY, APRIL 7TH, 1894.

GIVING THE PHARMACISTS A TURN.

We have repeatedly shown how the pharmacist may steal a horse whilst the grocer scarcely dare look at a halter, and that for the public protection the vendors of drugs should be looked after even more keenly than those who sell foods; but from year's end to year's end the chemist may sell whatever adulterated drugs he chooses, he may commit breaches of the Pharmacy Act, and the while lament in pious horror that a grocer should be permitted to sell a bottle of chlorodyne or Powell's Balsam, on the idiotic plea that those preparations are dangerous when sold by a grocer but are not so when a chemist pockets the profit. Members of Parliament, who really ought to be above being gulled by such nonsense, are led by the nose by the pharmacists, and unless some of our sapient legislators should be struck by a malady to which M.P.'s. usually are impervious, viz., "common-sense," we shall be having the chemist even a worse monopolist than he at present is. It is not in any sense an edifying spectacle, this of *The Pharmaceutical Society* "on the make," collaring with one octopus-feeler carbolic, with another chlorodyne, and the rest quivering with eagerness to seize hold of numerous patent preparations. The Pharmaceutical Society cannot be so ignorant as not to be well aware that many of the preparations are the most bare-faced swindles, but it is resignedly prepared to undertake even the sole sale of these, and burden itself with the profits—which is about as shameful and degrading to true science as it is mean and contemptible; but then, is not the pharmacist already a publican, a mineral-water manufacturer, a tea dealer, an oil and colourman, and heaven knows how many trades besides? Does he not "sweat" the medical man by "prescribing" for every ailment under the sun? Being all this, he naturally asks himself why he should set bounds to his desires? If he wants the earth, there are apparently some asses in Parliament who would, if they could, give it to him, and be guilty of the further folly of putting panniers upon themselves to carry it for him. We are gratified, therefore, to see that some very necessary attention is at last being given to breaches of the law by chemists. The credit of initiating this admirable work is due to Mr. Samuel T. Barber, chief inspector, Macclesfield. That it was needed, the following case testifies:—

At Macclesfield Police-court on March 19th, John Dale, chemist, Derby-street, was summoned for committing a fraud by using certain weights and scales, contrary to provisions of the *Weights and Measures Acts, 1878*; and also for having in his possession for trade purposes six weights which were false or unjust on the 7th inst.—The Mayor did not

adjudge in this case.—Mr. W. F. Taylor, town clerk (Messrs. Barclay and Taylor), appeared to prosecute on behalf of the Corporation, and Mr. H. A. W. Hastings defended.—Defendant, who (Mr. Hastings said) was suffering from illness, was allowed to retain his seat during the trial.—Mr. Taylor, in opening the case, said the defendant was a chemist, carrying on business in Derby-street, and it had been the practice for Mr. Wigan, the brewer for the North Cheshire Brewery Company, to send to the defendant's shop for oils, white lead, etc. On March 7th he sent a written order for one gallon of turpentine, one gallon of linseed oil, 20lbs. of patent dryers, 12lbs. of paste ochre, and 1lb. of inside oak varnish. A man named Bottomley was despatched for the order, but the goods were not weighed in his presence, but in a room behind defendant's shop; Bottomley suspected that short weight had been given, and made a statement to Mr. Wigan when he returned, as a consequence of which Mr. Wigan weighed all the articles except one, when it was found that the patent dryers, instead of weighing 20lbs., only weighed 10lbs., the ochre only weighed 7lbs. instead of 12lbs., and the gallon of linseed oil was short 34lbs. if taken by weight, or 3 pints if taken by measure. The being the custom to purchase either by weight or by measure. The gallon of turpentine was also short of weight, and of the five articles only one—the pint of varnish—was correct, the other four being considerably under weight. Mr. Wigan then sent a clerk named Bowman, who made out the order for the invoice to Dale's shop, and without the clerk having said one word to defendant that there was any deficiency in the weight of the goods supplied, defendant gave him an invoice for 12lbs. paste ochre and sent with it unsolicited 7lbs. more. This was a very significant fact. Mr. Wigan, Bottomley, and Bowman, then went to defendant's shop, and weighed the articles in his presence when they were found to be considerably short of weight, and strange to say—and this he alleged against defendant was a gross violation of the Weights and Measures Act, which must be taken into consideration in dealing with the case—in weighing the articles he did not use weights or anything of the kind, but a paper bag containing sand or some material of that kind, and an old gallipot. Mr. Wigan complained to the Inspector of Weights and Measures, and a visit was made to the defendant's shop, when it was found that he had not weights of sufficient size to weigh the articles. The weights he had were taken away and tested by the assistant inspector, Mr. Peter Brown, and in addition to the absence of the uniform mark of the Board of Trade, they were found to be short of weight. Six of the weights were unjust, against the purchaser to the extent of 14drs. downwards. The defendant admitted to the inspector that he had used a bag and gallipot in weighing.—Mr. Basil Penwarne Wigan, brewer for the North Cheshire Brewery Co., then gave evidence bearing on the facts as given by Taylor, adding that defendant said that he was very sorry he had given short weight, but it should not occur again. He attributed the weight to being "bothered." He said that the oil should weigh 8lbs.—Cross-examined: Defendant said he had lost his 14lb. weight when he removed.—In reply to Mr. Smale, witness said he had not previously checked the weights of the defendant.—Frederick Bottomley, painter, in the employ of the North Cheshire Brewery Co., and Frank Bowman, clerk to the North Cheshire Brewery Co., gave corroborative evidence.—Peter Browne, assistant inspector of weights and measures, stated that Mr. Wigan visited him at the office complaining about defendant. He went to defendant's shop and examined his weights and scales. The scales were correct, but on a 14lb. weight capacity. He took the weights to his office and tested them in defendant's presence. Six were deficient, varying from 14drs. to 4dr. each.—Samuel T. Barker, inspector of weights and measures for the borough, said: On Wednesday, March 7th, I received a set of weights from 1lb. down to 1oz. from the assistant-inspector. I examined and tested them and found that none of them were stamped with the uniform stamp: one was undenominated and six of them unjust, from 13 drachms down to 2 drachms. I then visited the North Cheshire Brewery Co., Limited, and examined the machine that the goods were weighed on. It had been verified and stamped, I have since tested it with standard weights and found it correct. I produce the can that the linseed oil was purchased in. It weighs when empty 2lbs. and will hold 1 gallon, taking 2lbs. off for the weight of the can there would be 5½lbs. of oil in the can instead of 9lbs., or 3 pints short. It is the custom of the trade to quote linseed oil at 9lbs. to the gallon.—Cross-examined:—The weights had not been before the inspector for the borough since January 1st, 1890, and were tested some time previous to that.—Mr. Hastings, addressing the Bench for the defence, said defendant pleaded guilty to the offence of using unjust weights, but not to that of unlawfully and wilfully committing a fraud by using the same. The whole question for them to decide was with regard to defendant's intention. The defendant's explanation with regard to sending the 7lbs. by the clerk Bowman was that he was not well on the day in question, and that he delivered what he thought was the full weight, but when the clerk returned with the invoice he referred to the original one, and finding he had only sent 7lbs. instead of 12lbs., he sent 7lbs. to make up as near as possible the 12lbs. With regard to the weights, defendant had had to remove from one side of the street to the other in consequence of alterations and improvements to the street, and in removing he lost some of his larger weights, and for some time past he had been endeavouring to weigh heavy articles by using the bag spoken of, and had thus made these errors, which, however, was not done intentionally. Defendant was fifty-five years of age and had had considerable domestic trials, and he was also suffering from some internal affliction which made it very awkward for him sometimes to serve his customers, and this had also interfered with the transaction in question. Mr. Hastings pressed defendant's age and the circumstances he had stated on the attention of the magistrates in mitigation of the offence.—In reply to Mr. Smale, Mr. Wigan said he thought defendant sent in his accounts either monthly or quarterly.—Mr. Smale said the Bench, after considering the case, came to the conclusion that there were great discrepancies and that there had been gross neglect, and they had decided to fine defendant in each case £5 and costs, or two months' imprisonment in each case. (Sensation in Court.)

A curious sidelight upon the ridiculous plea that the sale of poison only by a chemist is a protection to the public is afforded by the following cases heard at Bolton on March 22nd:

Four charges were laid against Robert Harrison, chemist and druggist, Farnworth, viz.:—Selling arsenic not having been mixed with soot or indigo; selling arsenic to a person not of full age; not making entry in book before delivering poison to a purchaser; selling prussic acid to a person unknown to seller. There was a similar list of charges against another Farnworth chemist and druggist, Thomas Coope, with the exception that the word poison was substituted for prussic acid. The prosecutions were conducted by Mr. M. Fielding, solicitor, Bolton, on behalf of William James Leggett, secretary of the Patent Medicine Vendors' Defence Association, whose headquarters are in Liverpool. Regarding the second charge against Harrison, which was first gone into, a smart-witted lad named Robert Wilson, aged thirteen, of 4, Tullock-street, Liverpool, deposed that on February 24th, under the instructions of Jos. Drury, the association inquiry agent, he called at Harrison's shop and purchased 20zs. of chlorodyne, at 8d. an ounce, after which transaction he handed the chemist a note, which was a prescription for "sheep's dip." He paid 6d. for this.—Cross-examined by Mr. Ferguson (Messrs. Holden and Holden): He told the chemist on Mr. Drury's counsel, that his father was a farmer. His father, however, was an engineer. He also said that his father used the arsenic in a pan which contained nothing else.—Drury was then called. He deposed to receiving a bottle and package from the lad, and these he passed on to

Mr. Edward Davis, analyst. Witness, cross-examined by Mr. Ferguson: He put the boy up to saying the above, although he knew the statements to be untrue. Sheep dip was composed of 1oz. of sulphur, 1oz. of potash, and 1oz. of white arsenic. Mr. Davis was called, and produced the paper which contained the dip.—Mr. Fielding observed that there was no name on it, only the word "Poison" on a label; this constituted an offence. Four grains of arsenic would kill a man, but the compound in question, which he had analysed, contained enough to kill 100 people. In answer to the Bench: One fly-paper would kill a man. He had had much experience of fly-papers, having had a lot to do with the Maybrick case.—Mr. Ferguson said that under the Arsenic Act, under which this case was heard, it was stipulated that the arsenic must be pure, and not compounded. Again, the mixture in question was a prescription, as shown by Mr. Brown, because it was used as a lotion for the destruction of insects on sheep-skins. Again, pure arsenic must not be sold unless mixed with soot or indigo, whilst this sheep's dip was white. The case had therefore been brought under the wrong Act—the Arsenic Act—and should have been brought under the Pharmacy Act, but even then he had a defence.—The Magistrates retired for a minute, and on returning imposed a fine of 5s. and costs, including a guinea for analyst's fee.—Mr. Hall (assistant magistrates' clerk) intimated that the magistrates' clerk would grant a case if Mr. Ferguson would state his point of law in writing.—In the case of selling prussic acid contained in a bottle of chlorodyne, the evidence of sale was repeated, and Mr. Davis, the analyst, was again called. He said there was not enough prussic acid in the whole of the bottle to kill an adult, there being not quite 1oz. of Pharmacopœia strength, but there were four grains of hydro-chlorate of morphia, which would just about kill a man. Cross-examined by Mr. Ferguson: The bottle produced contained less prussic acid than chlorodyne generally did. It was possible to discover the quantity of prussic acid, although it was very volatile. Do you call it a preparation of "prussic acid?" I say it is a preparation "containing" prussic acid.—Mr. Ferguson: That is different. Mr. Davis then said it was a preparation of "prussic acid."—Mr. Ferguson, for the defence, said that it was more a preparation of chloroform and morphia than of prussic acid.—The clerk did not agree with this and the Bench imposed a fine of 1s. and the ordinary court costs.—All the other six cases were withdrawn on payment of the cost of the summonses.

These facts are in themselves eloquence enough, and show the need for our complaints so often made that the chemist is permitted to break the law with impunity. The evil has its terrible side also. In the Maybrick case enough arsenic was found in various portions of James Maybrick's belongings to poison a score of persons, but there was no label or wrapper to be found indicating *by whom it had been sold, or purchased*. It may have been bought by one of James Maybrick's own relatives, influenced by the twin passions of hate for the woman and cupidity to seize the insurance-money so strangely and unnaturally willed away. Who can tell? Had the arsenic been sold by a chemist who had registered its sale to any of the persons concerned in the Maybrick case, he would surely have come forward and stated the fact; but no chemist divulged any such sale. Why? Doubtless because the sale had been made without the Act having been complied with, and the chemist cravenly kept silent, fearing the penalty. Analyses showed that the arsenic in the preparations analysed was not from the fly-papers used by Mrs. Maybrick for a face-wash, inasmuch as it contained no fibres, and to get the arsenic from fly-papers without the presence of minute fibre from the papers would be a thing impossible for Mrs. Maybrick to do. Yet upon mere conjecture the pure arsenic—the purchase of which is not traced to Mrs. Maybrick—is regarded as damning evidence of her guilt. Now, had the pharmacist received earlier attention it might have been found who really purchased the arsenic and placed it in positions to which, whilst Mrs. Maybrick was unconscious, the police were apparently straightway guided; and there might be a chance of reaching the author or authors of what looks, when carefully examined, a very devilish conspiracy. Did our warnings need other evidences, such might be found in the fact that five samples out of eight ordinary glycerines bought in Leeds in December last contained arsenic entirely unknown to vendors or purchasers. We should pity the faithless wife whose husband died suddenly, and in whose possession such should be discovered, for it would never suggest itself to anyone that the poison might have been accidentally present in the preparation and innocently administered. Enough, however, has been said to show that Food and Drugs Act inspectors will do well to give the pharmacists a turn.

FERTILISERS AND FEEDING STUFFS APPOINTMENTS.

THE appointment of Mr. C. H. Southwell (county analyst for the Administrative County of Holland, Lincolnshire), as district analyst under the Fertilisers and Feeding Stuffs Act for the same county, has been approved by the Board of Agriculture.

ROSS-SHIRE COUNTY COUNCIL.—At a special meeting of the Ross-shire County Council on March 28th, Dr. Aitkin, Edinburgh, analyst to the Highland Agricultural Society, was appointed county analyst under the Fertilisers and Feeding Stuffs Act by the casting vote of the chairman, Sir Kenneth Mackenzie, over Dr. Falconer King. It was agreed to proceed with the erection of Portnambothag Pier, Lewis.

FACT v. FICTION.

THE *Evening Standard* has again been booming the margarine traducing movement, and the same old fictions have been trotted out—that margarine is made from filthy offal, abattoir sweepings, candle grease, soap, etc. There is a beautiful vagueness about these charges against margarine that cannot be alleged against the following facts about butter-making. The Gainsborough sanitary inspector reported at the meeting of the Rural Sanitary Authority on March 27th, "that he had visited premises occupied by a Mr. Shooter Smith, at Haxey. The house was in a filthy condition, and preparations were being made for butter-making, with surroundings too filthy to describe. Fowls seemed quite at home on the hearth, two cats were on the bed, which was in the living room, the floors were covered with rushes, and a dog was chained inside the slaughter-house by the carcass of a calf. The tenant bears the proud title of 'Horse Slaughterer to Her Majesty.'" The inspector asked if something could not be done under the Dairies and Cowsheds Acts, but the Authority only ordered the nuisance to be abated. Dr. Wright, the medical officer, reported visiting the same premises, and said he found the carcass of a pig which was rotten, but the tenants were boiling one of the legs for dinner.

The *Evening Standard* has given us a heavy dose of untruths about margarine. Suppose, in fairness, it gives its readers a little bit of the truth about butter. For our part, being concerned to get at the truth of the question, we see no reason to be astonished that the public taste for clean, wholesome margarine, in preference to filthy or inferior butter, is rapidly growing; and when the former is sixpence or so per pound cheaper, the dairy-farmer's advocates may just as well try to stop the Atlantic with a mop as prevent the sale of margarine.

ALLEGED ADULTERATION OF CURRANT CAKE.

JOHN MORGAN, a grocer, of Cilfynydd, was summoned before the Pontypridd magistrates on March 25th, charged with an offence under the Food and Drugs Act.—Deputy Chief Constable Jones, who prosecuted, deposed to having on February 13th purchased from the defendant half a currant loaf, for which he paid 4d. The sample was sent to the county analyst, Dr. Morgan, who, in his certificate, declared it to contain alum equivalent to 25 grains per 4lb. loaf, and the presence of alum in food was prejudicial to health.—Dr. Williams, the county medical officer of health, gave evidence to the effect that alum in any form in bread was prejudicial to health. It would upset the mucous membrane of the alimentary canal, and interfere with its functions.—Mr. James Phillips, for the defence, contended that the analyst's certificate was not specific enough, as, in compliance with the Act, it should have given the exact proportions of the ingredients in the sample analysed. It would be argued for the defence that the sample contained no alum at all, and he (Mr. Phillips) applied that the portion of the loaf retained by Superintendent Jones be sent to Somerset House.—The Stipendiary acquiesced, and the case was accordingly adjourned for a fortnight.

THE MARGARINE ACT.

AT Bow-street Police-court on March 21st, Francis Everett, New Turnstile, Holborn, appeared to two summonses taken out by Mr. H. C. Jones, clerk to the Board of Works for the St. Giles's District, one charging him with selling margarine without having it properly labelled, and the other with selling it as butter. It was proved that the stuff contained at least 70 per cent. of foreign fat. It was also proved that a piece of paper bearing the word "margarine" in ink was placed on the stuff, but the writing was face downwards, and Mr. Vaughan held that this was not sufficient under the Act. The defendant was fined £3 and costs, having been previously convicted of selling adulterated coffee.—Robert S. Tassell, of 3, Little Coram-street, was summoned for selling butter adulterated with 70 per cent. of foreign fat, and fined 10s. and costs.

DOVER AWAKES.

THE Food and Drugs Act has hitherto been a dead letter in Dover, no samples being taken by any official. Steps are, however, now to be adopted for the enforcement of the Act, one of the aldermen having given notice of his intention to move for the appointment of an inspector.

THE COMPOSITION OF COUGH LOZENGES.

IMPORTANT PROSECUTION.

THE Lanchester Bench on Thursday heard an important test case under the Food and Drugs Act, said to be the first of the kind. Elizabeth Wilson, a small confectioner, carrying on business at Burnopfield, was summoned by James Laidlaw, an inspector under the Food and Drugs Act, for selling a quarter of a pound of linseed, liquorice, and chlorodyne cough lozenges, which on being analysed by Mr. W. F. K. Stock, of Darlington, the county analyst, were found not to contain any morphia, which was one of the essential constituents of chlorodyne.—Mr. Joel (barrister-at-law) defended.—Mr. Laidlaw quoted authorities to show that one of the component parts of chlorodyne is morphia. It had been decided that the preparation of Dr. Collis Browne, the inventor of chlorodyne, contained morphia, therefore it could not be sold unless labelled as poison.—Evidence was then given by Mr. J. W. Wilson and Mr. Laidlaw as to the purchase of the article. They did not ask for chlorodyne lozenges, but merely for the sweets contained in the bottle, and labelled "linseed, liquorice, and chlorodyne lozenges."—Mr. J. Brown, chemist, and Dr. Taylor, both of Chester-le-street, declared that morphia was an essential element of chlorodyne, and that when they asked for the article they expected it to contain morphia.—The defence of Mr. Joel was that the purchaser did not ask for linseed, liquorice, and chlorodyne lozenges, and that there was no proof that morphia was necessarily a component part of chlorodyne. He could call scientific evidence to show that although Dr. Collis Browne's nostrum might contain chlorodyne, the word at the present day in a commercial sense did not imply that one of the ingredient parts should be morphia. The British Pharmacopoeia was not recognised as a standard authority on the matter. Besides which, all prescriptions were not made up by chemists or druggists according to that formula. Morphia was not left out of the article because of its expense, but because of the danger to the public. Further, if the chlorodyne lozenges contained morphia such people as the defendant would be proceeded against under the Pharmacy Act for selling poison.—Dr. Kerfoot, of Manchester, a wholesale manufacturer of cough lozenges, stated that it was the regular practice to make chlorodyne lozenges both with and without morphia, mostly without, because of the danger to the public.—Mr. Ellis, of the Throat and Ear Hospital, Newcastle, stated that it was not necessary for chlorodyne to contain morphia.—Mr. Joel said he had the city analyst of Manchester and other experts to call, but the justices dismissed the case at this stage, and ordered the prosecution to pay the costs.

FRENCH LIQUORICE ABOMINATIONS.

WE have on several occasions warned traders against vending adulterated liquorice, because just as has been the case with vinegar, lard, yeast, ground ginger, etc., grocers, confectioners, and chemists run serious risks of prosecutions, loss of business, money, and reputation. We might take, as an example, a specimen of adulterated rubbish sold as French liquorice which we have before us as we write. It is branded *Lavour*, and is so absolutely lively that if the revolting insects with which it teems had as much intelligence as they have activity, one need only put Monsieur *Lavour*'s address upon the liquorice—wherever that manufacturer of disgusting rubbish may live—and its inhabitants would be able to walk away with it to him.

It is disgraceful that such filthy trash should be permitted to be sold to the public. In a future issue we shall give the results of a careful examination of the samples, but it is evident that this class of liquorice turns rotten from inherent filthiness, differing in this from pure liquorices, such as Solazzi, which vendors may sell with safety and without any risk of prosecution.

THE CHOLERA MICROBE.

IN a paper which has just appeared in the official volume issued by the Imperial Department of Public Health in Berlin, Dr. Dunbar describes a large number of special investigations which he made last summer and autumn on the presence of cholera microbes in the River Elbe, near Hamburg, and several other rivers. Over 800 samples were examined of the Elbe water alone, and microbes resembling the cholera bacillus were found constantly present both in the raw river water and the town supply up to the beginning of November, after which they completely disappeared. But Dr. Dunbar traced them nearly a month later in the mud at the bottom of the river, and he suggests that they remained dormant in these surroundings, ready at the first favourable opportunity to reassert themselves and invade the stream itself. On this assumption no fresh importation of cholera virus is required to start an epidemic, only suitable conditions favouring the growth and multiplication of the microbes already present in the water.

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CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
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AN INQUIRY INTO THE RELATIVE MERITS OF BUTTER v. BUTTER SUBSTITUTES.

III.

(Continued from page 98).

THE remaining portion of the inquiry, relative to the manufacture and sale of oleo-margarine and the question of compliance with existing laws, is embraced under the following topics:—1. General View of the Subject and its Importance. 2. Inspection of Establishments where Oleo-margarine and Oleo-oil are manufactured in Massachusetts and in other New England States. 3. Protection Afforded by Existing Laws, and Extent of Compliance with such Laws. (a). Inspection under the National Law. (b). State Inspection. (c). Local Inspection. 4. Summary and Conclusions.

For the sake of convenience, and as a matter of conformity to the terms employed in the national and the State laws, the term "oleo-margarine" will be used in this report to include all substances made in imitation of butter, as now manufactured and offered for sale in Massachusetts. As now made in most of the factories in the United States, oleo-margarine is a more complex substance, with reference to the number of ingredients entering into its composition, than that which was at first proposed and made in France, which consisted mainly of melted beef fat, churned with milk, to which colouring-matter and salt were added.

Dr. Brackett accordingly began his investigation into the healthfulness of butter substitutes. It is to be regretted that "professor" Long, who is responsible for so much nonsense in the press about condensed milk and butter substitutes, and "Official," in *The Evening Standard* of March 27th, should be allowed *carte blanche* to impugn the healthfulness of butter substitutes, when both are confessedly in a state of utter ignorance upon the question. What, for example, could be more foolish than the following, gravely paraded in *The Evening Standard* of March 27th by the person signing himself "Official."—

I, as one exercising a large influence in the use of butter, was specially invited to go abroad some time back by a large margarine manufacturer, to examine and see the manufacture of margarine in his factory, with a view to giving him a testimonial as to its purity and nutritious properties. I declined, believing that it is impossible for margarine, as at present manufactured, to be nutritious, and that its purity is only obtained through undergoing various acid and other processes, which destroy any nutriment the various fats of which it is made possess.—
Yours truly,
March 26th.

"Official," it is seen, alleges that the purity of margarine is obtained by processes that destroy any nutriment the various fats possess. We might comment upon his refusal to examine for himself, which by his own admission arose from prejudice; but leaving that aside, we are compelled to challenge his statement as to the process of margarine manufacture destroying any nutriment that the fats possess as absolutely untrue. Unlike "Official," we have examined for ourselves. We have further published the results of our examination, and those as well as the experiments of Dr. Brackett show that "Official's" statements are neither more nor less than the outcome of prejudice—a pack of lies without an atom of evidence in their favour. What is wanted in this question is the truth, and nothing but the truth; that the interests of the Hon. Horace Plunkett, M.P., and "professor" Long's friends should be considered in no greater degree than those of the public. If at 8d. to 11d. per lb. the consumer can get an article that is superior to most pure butters, and quite equal to the best, then any attempt to compel so useful and economical an article of food to be coloured green or pink is nothing else than an unblushing effort to "exploit" the public for the benefit of a class—for it must not be forgotten that butter is coloured just as margarine is. But when a lying campaign is inaugurated to arouse public opinion in favour of such a piece of special class legislation, then it behoves those who know how unwarranted the attempt is to make public the true facts.

Dr. Elliott G. Brackett entitles his report

THE HEALTHFULNESS OF OLEO-MARGARINE AS AN ARTICLE OF FOOD.

It is the writer's object to consider the subject of oleo-margarine as far as possible from a standpoint of healthfulness alone, and to regard it individually as an article of food. However, both in its intended use and in its composition, it is so intimately connected with butter that it is scarcely possibly to entirely disregard this relation; but, except as may be necessary for such comparison, it

has been given a strictly individual position. No account has been taken of its value as a food for invalids, but it has been considered as an article of food for use by those who ordinarily do not make restrictions in their diet.

Already so much has been written and so many opinions expressed, by experts and others, that, especially as to the chemical view of oleo-margarine, there is no lack of information, and from men best qualified to give opinions; but, as it was the object to present a purely unbiased opinion on this sanitary question of oleo-margarine, it was thought best that such should be given first from evidence obtained by a practical acquaintance with the processes of manufacture as carried on to-day; and therefore all places where such manufacture was conducted in New England were visited, and its manufacture seen, as well as that of the oleo-oil and lard. In addition to this information and that obtained from the reports mentioned, are the results of experiments personally conducted, mainly on a physiological basis, with the object of determining the digestibility of the products.

APPLICATION OF THE TERMS OLEO-MARGARINE AND BUTTERINE.

These terms, which have been at times intended to designate different and distinct divisions of artificial butter, have been so freely and interchangeably used, that at present there is practically no difference made, and they are used synonymously. Strictly speaking, oleo-margarine applies to an artificial butter, in the manufacture of which no natural butter has been added other than that from the milk used in the churning; and butterine is that which has natural butter as one of its ingredients, and is therefore a mixture of oleo-margarine and butter. The national law has made the term oleo-margarine to apply to all forms of artificial butter and butter substitutes, and requires them to be stamped as such. By this law oleo-margarine includes "all manufactured substances heretofore known as oleo-margarine, oleo-oil, oleo-margarine oil, butterine, lardine, suine and neutral, and all mixtures and compounds of oleo-margarine, oleo, oleo-margarine oil, butterine, lardine, suine and neutral; all lard extracts and tallow extracts, mixtures and compounds of tallow, beef fat, suet, lard, lard oil, vegetable oils," etc., so that each of these substances, either alone or in mixtures, is classed under the one head of oleo-margarine. Although such an array of articles of this class is gathered legally under this head, practically its significance is far less, and is applied only to the two mixtures above alluded to, intended for butter substitutes, and known as butterine and oleo-margarine.

The origin of oleo-margarine, resulting as it did directly from scientific investigation, should not be passed over without mention. A complete description of the process may be found in almost every article on oleo-margarine, and I shall therefore allude to it only briefly and so far as may be necessary for use in comparison with the present methods of manufacture, which are but modifications and improvements on this original process.

ORIGINAL PROCESS.

In 1856-67 Mège Mouriés, following the request of the French Government, undertook to obtain a compound which should take the place of butter. His object was to obtain the same product by substituting an artificial for a natural process. By experiments he found that by depriving cows of nourishment, so that they were losing weight, their milk still contained butter; and, inferring the source of this to be the natural fat, which, by metamorphosis, was secreted as butter, he accordingly endeavoured to imitate this process as closely as possible.

He considered that in the transformation into butter fat the presence of ferments played an important part, and these were obtained by extraction from the animals. All fats which were to be used in the manufacture of the oleo-margarine were first soaked in water containing sea-salt and one per cent. of sulphite of soda. This was to neutralise a ferment which he supposed to cause the disagreeable taste of fat. The fat was then thoroughly crushed and hashed, and subjected to the action of artificial gastric juice at a temperature of 103 degs. F. (40 degs. C.), until digestion had so far advanced that all lumps had disappeared, when the whole mass was allowed to settle, the clear fat cooled and subjected to high pressure to separate the stearine, the fluid portion coming from the press being the oleo-oil, the part used in the manufacture of oleo-margarine. As thus extracted, he obtained a product of a slightly yellow colour, with a taste resembling neither tallow nor fat; and, under the name margarine, this was used extensively for kitchen purposes.

He supposed the fat, before being secreted in the milk, to undergo change by the influence of a ferment, and in his artificial

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process he endeavoured to change this into butter fat by the same agency. He therefore churned the melted fat with finely-chopped fresh cows' udders, and, to give the ordinary flavour of butter, milk or cream was added. The product thus obtained resembled butter in appearance and taste. He thus realised the object of his theory in obtaining the product by an artificial process, but from the same source; deriving the fat from the animal, extracting the more solid portion, that it might be fluid at a temperature below that of the body, using natural ferments for metamorphosis into butter fat, and imparting the flavour by the use of milk. He gave to this product the name oleo-margarine, as the term margarine had long been used to designate a substance which was found by Heintz to be a mixture of stearine and palmitine, but which does not exist in nature, although it has been obtained by synthesis.* How much this process has been changed in order to supply a large demand for the article, and to satisfy the requirements of more rational chemistry, will be seen. The name has been held to apply, in a way, to the different butter substitutes.

On this process he took out a patent in England in 1869, and in America in 1872. Since that time a very large number of patents have been issued, on improvements and methods of preparing fats, and making of butter substitutes. The rendering of the fat at a low temperature, and the conversion of the oil into butter by churning with milk, were original with him, and form the most important feature of the process. (Proceedings American Chemical Society, vol. I., p. 155.) One patent, which resulted in the most important improvement, was the instantaneous chilling of the oleo-margarine, when drawn from the churn, by contact with ice or ice-water, which gives it a "grain" more nearly resembling butter. The patent for this improvement was taken out by H. A. Mott.

By this time several changes had been made in the original process, mainly in the direction of making it more simple, and among these was the omission of the use of ferments; but scarcely any other essential change has been made, though details have been considerably modified, and there is also difference in the methods of different manufacturers at present. These differences, as far as could be judged, are mainly in the temperature used throughout the manufacture, and in some cases this varies considerably. In addition, there are special peculiarities which would necessarily result from many individuals making the same product, and which are more matters of skill and judgment, the result of long experience, and which the manufacturers claim for themselves, but which are neither tangible to an investigator nor possibly explicable even by the workmen; but such is the fact, as was frequently mentioned, that the maker attained a certain skill by long practice, which insured good results, without which the same method, though strictly adhered to, would give far inferior success.

In only very few of the New England manufactories are the oleo-oil and the oleo-margarine made by the same party, and in the same place, as oleo-oil is a regular article of the market, and its manufacture a separate industry.

There are two kinds of fats used in the production of oleo-oil, and they yield two grades of oil—the fat from the freshly killed animal, which gives the better, and the suet fat, which yields a somewhat inferior grade. The oils in the market differ in quality, this difference seeming to be the result of skill and judgment in the extraction, rather than of the material used, as the latter is more uniform. Each manufacturer makes the two grades, which are called by distinguishing names, and in the quotations are known by such.

During the preparation of this report, not only was the process of manufacture of oleo-margarine investigated, but also that of oleo-oil and lard, and all following descriptions of processes are from those seen during this investigation.

MANUFACTURE OF OLEO-OIL.

For the first grade, the caul fat, or, as it is sometimes called, "slaughter or long fat," is used. This is trimmed in the room where the slaughtering is done, and sent through holes in the floor to a room below, where it is received in tanks filled with water which has had the chill removed (about 80deg. F., 27deg. C.). Here it is left for a while, and then transferred to tanks containing ice water. This gradual cooling seems to be

a necessity, since, if plunged at once into ice-water, the outside is suddenly chilled, and the animal heat remaining in the centre of the mass sours the whole. This fat, when cool, is passed through hashers, and run into steam-jacket kettles, and thoroughly melted, being stirred continually. The temperature in this process is about 140deg. F. (60deg. C.), or lower, although it may be as high as 165deg. F. (74deg. C.). The time necessary to completely melt the mass is about three hours. The scrap is now allowed to settle, and the clear oil is drawn off by a pipe which drains from the top only. This oil is again allowed to stand from six to twelve hours, as may be necessary, that the water and remaining pieces of fibre may settle, and this sediment is withdrawn through pipes in the bottom.

The process of extracting and clarifying is now completed, and it remains only to separate the stearine, which is the part of the fat not used in the oleo-margarine. Up to this time the temperature has not been allowed to fall, but the fat has been kept in a melted state. The cooling or "seeding" takes about three days, and for this it is placed in large receivers and kept at a temperature of about 80deg. F. (27deg. C.), until the stearine has gathered. This begins by the formation of very small particles, which afterwards collect in the centre of the mass, and grow like a sponge. When ready for pressing it is a semi-solid mass, somewhat coarsely granular in appearance. Small quantities are packed in cloths of heavy ducking and laid between plates, about twelve in each section, and subjected to a very heavy pressure. The press room is kept warm, but at a temperature below that of the seeding room. The oil thus expressed constitutes oleo-oil, and is a mixture of oleine and palmitine, while that left in the cloths is in white, hard cakes, one-fourth to one-half inch in thickness, and consists of pure, or nearly pure, stearine. The oleo-oil, as it comes from the press, is a clear amber-coloured fluid, free from odour or fatty taste. This is packed in tierces, and, when opened at ordinary temperature, is a light yellow solid.

For the other grade of oil the suet fat is used. This is carefully sorted and trimmed, no part being used unless it is perfectly sweet. This then passes through the same process as is described above.

Variations in this process are found with the manufacturers, with reference to detail, but in its essential steps it is the same.

The advantage of having the place of manufacture near the slaughtering house is an evident one, allowing no opportunity for the fats to become sour by waiting for transportation, although with care this can be reduced to a minimum.

The temperature used by different makers in rendering the fat is subject to some variations; but these apply rather to the extremes which are considered safe, than to the actual heat used. Some do not allow a heat greater than 140deg. F. (60deg. C.), and practically use one much less; by others 160deg. F. (71deg. C.) is considered safe. However, the aim is to avoid high temperatures. In this particular there is a departure from the original method of Mège Mouriés, who specified that the temperature should not be carried above 125deg. F. (52deg. C.), claiming that in so doing one incurred the risk of the disagreeable greasy taste in the product, which is very essential to avoid.

To be continued.

CONTRACTS FOR DISINFECTANTS.

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To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

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ADULTERATED SPIRITS AT WHITBY.

At Chester Castle Petty Sessions on March 24th, Martha Darlington, landlady of the Sportsman's Arms, Whitby, was charged by Inspector Hallard of the Cheshire County Council, with selling spirits adulterated with water to a greater extent than allowed by law on March 1st.—Inspector Hallard deposed to visiting the house and asking for a small Irish and a small rum. He was served, and shortly afterwards asked for a pint of whiskey, but defendant demurred, saying the keg did not contain so much, so he said he would take what it did contain. She emptied the keg into a pint pewter and got half a pint, then deliberately filled the measure with some other spirit. He told her she had spoiled the sample of whiskey and requested to be served with a pint of rum, with which he was supplied, and the analyst certified it to contain 30 per cent. of water, or 5 per cent. more than allowed by the Act. He then asked for a pint of gin, but defendant left the bar and sent her daughter, who supplied him. The gin was found to contain 45 per cent. of water, or 10 per cent. more than was allowed by the Act.—Mr. Giles, who appeared for the defence, said defendant recently lost her husband, and she was partially unaccustomed to the business as yet, as her husband had always attended to those matters. It was not a wilful offence.—Fined 10s. and 15s. 6d. costs in each case.

SADDLEWORTH NUPKINSES AGAIN!

THE Local Government Board does a yearly lament about the encouragement magistrates give to rogues to compete unfairly against honest grocers and rob the public, but of what use is this paragraph in a yearly report! Clearly none at all, else how could we have such flagrant instances as that of the Saddleworth magistrates! We have before shown the unfitness of these persons for responsible positions, and last week they gave fresh evidence of it by fining an offender 5s., to include all costs. Now this decision, like others given by this bench of magistrates, has only one object, viz., to mulct the West Riding County Council in such expenses that they will be compelled to abandon the enforcement of the Acts in that district. Surely it is time the chairman of the Saddleworth Bench—Mr. Buckley Bent—received a straight intimation that any more conduct of this kind may lead to him and his colleagues being deprived of a commission which they grossly abuse. A few "examples" are sorely needed.

THE MARGARINE ACT.

AT West Bromwich Police-court on March 29th, Thomas Ellsmore, grocer, of New-street, West Bromwich, was summoned for three offences under the Margarine Act on March 19th. Mr. J. E. Morris, who prosecuted, explained that defendant was charged with selling margarine as butter, with not having the same labelled, and with wrapping it in paper without the word "margarine" printed upon it.—Henry Toy visited defendant's shop and purchased 1lb. of butter, for which he paid 6d. It was found to be margarine, and was not labelled, neither did defendant wrap it in a stamped wrapper.—Mr. White (Public Analyst) stated that the article was adulterated to the extent of 90 per cent. of fat foreign to butter.—It was stated that defendant had been an assistant in a large grocer's shop at Great Bridge for many years, and had a thorough knowledge of the business.—Defendant pleaded that he had run out of butter on the day that the sample was taken.—Defendant was fined £9 9s., including costs. Mr. John White, F.I.C., the borough analyst, gave evidence in support of his certificate.

PUDDING MILK.

JAMES HAWTHORNE, of 1, Belgrave-terrace, Willesden, was summoned at Harlesden on March 29th for selling milk to Robert Watts, Middlesex County Council Inspector, which was adulterated with at least 20 per cent. of added water.—The inspector deposed that he purchased the milk from defendant at about 7 a.m. on March 10th. He produced the analyst's certificate, showing that it was adulterated with at least 20 per cent. of water. When purchasing the milk, defendant was some time before he would sell it, and then said it was milk and water. He said he put some in and so did his man.—The defence was that it was sold as milk and water, which was prepared for the "pudding round."—Mr. Bird wanted to know why the customer could not add the water. It was a very bad case, and no doubt defendant meant to deceive and cheat. He must pay a fine of £7, and costs.—The fine was afterwards reduced to £5, defendant being a poor man.

THE UTILISATION OF FISH OFFAL.

AN interesting commercial undertaking, of importance to the fishing industry, has been formed in Aberdeen for the manufacture of fish offal into manure and oil, and last Saturday the premises of the company were formally opened at Cove. Above 120 gentlemen, mostly interested in the fish trade, were invited for the occasion, and the machinery was set in motion by Mr. Kilgour of Loirston. Mr. Peter Eselement proposed success to the new enterprise.

A "FARMER'S STALL" AT BIRKENHEAD.

At the Birkenhead Police-court on March 30th, Rebecca Candlish, a married woman, living at 1, Rose-street, Birkenhead, was summoned on three charges—(1) for selling a certain article of food, to wit, butter, which was not of the nature, substance, and quality demanded by the purchaser; (2) for selling margarine which was not in a printed wrapper, with the name "margarine" printed thereon; and (3) for exposing margarine for sale which did not bear the required label.—Mr. Bromfield, deputy town-clerk, prosecuted, and stated that on March 3rd, Mr. Dawson, chief inspector of nuisances, went to a "country woman's" stall in the Birkenhead Market, which was occupied by the defendant, and asked for a pound of butter. Defendant handed him a pound pat of butter from a basket. The butter was all made up neatly, and the basket was covered with linen cloth. On the stall there was a quantity of poultry, flowers, and all such produce as one reasonably looks for on a farmer's stall. The butter when analysed was found to be pure margarine.—Inspector Dawson bore out this statement, and said he paid 1s. 4d. for the butter. Defendant gave her name as Rebecca Clarke, and her address as 1, Corfu-street, but it was found that her name was

Candlish, and that she resided in Rose-street. This she explained by saying she had been recently married, and that the stall was still in her maiden name.—Defendant pleaded that she bought the butter some time ago, at Kieran's, Watson-street, and he told her it was pure butter. It had been in the house more than a month, as she had been ill.—Patrick Kieran stated that the defendant had bought the last lot of butter on December 28th. It was pure butter. He had never sold her anything but pure butter, which had come from Dundalk.—Inspector Dawson, on this, said that he had since bought two lots of butter at Kieran's at 1s. and 1s. 2d. a pound, and both were pure butter.—Market-inspector Gregory stated that when defendant took the stall she said she lived at Cuddington, near Chester, but subsequently, after her marriage, she said her friends would still send her butter from the country to her house in Birkenhead.—Alderman Willmer said the case was a most serious one, and showed a gross fraud. Defendant would have to pay a fine of £5 and costs on the first case, and 1s. and costs on each of the other two cases. The total amount was £5 12s.

THE BIRMINGHAM SEWAGE FARM.

SEWAGE farms, whatever they may do in disposing of sewage do not always help to fill the ratepayers' pockets. According to the *North British Agriculturist* the Birmingham Sewage Farm involves an annual loss of £30,000. This town is particularly unfortunately placed as regards this method of treating sewage, for, owing to the large quantities of acids carried into the sewage from its numerous factories, £3,000 a year has to be spent on lime alone to neutralise them, or all vegetation would be impossible. Great expense was involved in the initial laying down of the works owing to the want of a sufficient fall for the sewage on the farm, and the purchase of the land necessitated a very heavy outlay. The manager, Mr. David Tough, is well recognised as one of the most competent in the country, and has gained prizes from the Royal Agricultural Society for his former management of the Warwick Sewage Farm; but the force of circumstances is too great, and so the ratepayers must continue to grumble.

THE INLAND REVENUE LABORATORY.

THE *Yorkshire Post* says:—"The amalgamation of the Revenue Laboratories was due more to rivalry between the Excise and Customs chemists than to a future financial saving. An agitation started by some of the public analysts, whose analyses were found to be wrong by the Excise chemists, acting as referees under the Food and Drugs Act, also had some little effect. The principal reason was the desire of the Treasury to put a stop to the attacks made by the analysts at the Custom House on those at Somerset House. The retirement of Dr. Bell from the Inland Revenue Laboratory and the passing of the Fertilisers Act gave the Treasury an opportunity to put a stop to this unseemly rivalry. This was promptly seized, and an outside man, much to the surprise of the Government chemists, put at the head of the combined establishments. The question now arises, If the laboratories can be united, why cannot the two boards, Customs and Inland Revenue, be joined, and so save the country several thousands yearly? Now we have two sets of Commissioners and a double staff, which practically means a double expense as far as the London headquarters are concerned, and, indeed, at some of our seaports—Hull, for example. Ministers are not disposed to favour the amalgamation, for it would decrease their patronage.

FAITH is sometimes personified as a drenched female clinging to a sea-washed rock; but a better personification would be a bald-headed man buying a bottle of Mrs. Allen's hair-restorer from a bald-headed barber.

POWELL'S BALSAM OF ANISEED—FOR COUGHS.

Powell's Balsam of Aniseed—Coughs and Asthma.
Powell's Balsam of Aniseed—Coughs and Bronchitis.
Powell's Balsam of Aniseed—Coughs and Hoarseness.
Powell's Balsam of Aniseed—Coughs and Lung Troubles.
Powell's Balsam of Aniseed—Coughs.—Safe and Reliable.
Powell's Balsam of Aniseed—Coughs.—Established 1824.
Powell's Balsam of Aniseed—Coughs.—Refuse Imitations.
Powell's Balsam of Aniseed—Coughs.—Sold by Chemists.
Powell's Balsam of Aniseed—Coughs, Night Cough, Influenza.
Powell's Balsam of Aniseed—Coughs Relieved Instantly.
Powell's Balsam of Aniseed—Coughs.—The Oldest Remedy.
Powell's Balsam of Aniseed—Coughs.—Trade Mark.
Powell's Balsam of Aniseed—Lion, Net, and Mouse.
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MANUFACTURED BY

JOHN WYETH AND BROTHER,

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A liquid preparation of the choicest Beef, containing the nutritive albuminous principles in an unaltered and soluble form. It is produced under the careful manipulation of skilled operative chemists, supervised and directed by the highest commercial integrity. The experience of the Medical Profession and the analyses of the most searching character by Eminent Chemists, prove that

WYETH'S BEEF JUICE

contains all the albuminous principles of Beef in an active and soluble form; that it contains the hæmoglobin of meat unaltered; and that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession. POINTS OF SUPERIORITY OF

WYETH'S BEEF JUICE.

It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.

How **WYETH'S BEEF JUICE** is to be taken:

Wyeth's Beef Juice should always be taken in Cold, never in Boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour, and activity to overworked and exhausted brain and body.

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CORRESPONDENCE.

Re ANOTHER YEAST PROSECUTION.*To the Editor of FOOD AND SANITATION.*

April 3rd, 1894.

DEAR SIR,—In FOOD AND SANITATION of March 31st we find an article entitled "Another Yeast Prosecution. In the course of the trial Mr. Phillips asks to Mr. Jago, "Do you know Jansen and Co.?" From this we derive the suggestion that the yeast Mr. John Davies of Clydach Vale sold, and for which he was summoned, was supplied to him by a firm Jansen and Co.; at least we cannot find another reason why such question should be put.

Being large manufacturers of yeast, and as we send many hundreds of tons of yeast into England, which is all guaranteed pure yeast, packed and pressed in the same pure state as it leaves our distilleries, you will easily understand that the use of the name of our firm in the above proceedings very much interests us, and that it is of great importance to us to know what the name of our firm had in any way to do with this case, as it puts a blame on us which we do not deserve, and which, of course, is injurious to our trade.

If there exists another firm of the same name in England, the residence of that firm should have been mentioned as well as the name, when the question was put, so that no doubt might be left as to the place where the yeast was manufactured, or rather adulterated. We therefore must request you to inquire what firm of what place has to be understood, in order you may be able to efface the bad impression which may have been made by publishing the case in your paper.

By so doing you will greatly oblige, yours respectfully,
pro JANSEN & Co.
P. C. KOK.

Westmolenstraat, Schiedam.

[As far as we can judge from the report supplied us, Mr. Phillips mentioned Messrs. Jansen and Co. as manufacturers of pure yeast, to show the utter absurdity and worthlessness of Mr. Jago's evidence, Mr. Jago having alleged that there is no such thing as pure yeast in the face of the fact, which Mr. Phillips apparently wished to point out, that Messrs. Jansen and Co. supply absolutely pure yeast, as do all the members of the Schiedam Yeast Union.—EDITOR.]

PROCEDURE AGAINST WARRANTY GIVERS.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—As a reader of your valuable paper may I ask you to supply me with the particulars as to the mode of procedure in obtaining a conviction against the giver of a false warranty in respect to milk?

As inspector under the Adulteration Acts, I purchase a sample of milk from a vendor in the street for analysis. The analyst reports the said sample as being adulterated and from which the fat has been abstracted. I summon the vendor, who gives me notice of special defence by a warranty as required by the Act. Assuming the "warranty-giver" resides outside my district in another county, can I proceed against him for issuing a false warranty under Sec. 27, Sale of Food and Drug Act, 1875? If so, may I ask you to describe step by step the whole course of procedure, and greatly oblige, yours faithfully,
J. H. C.

[Perhaps Mr. Bartlett, Clerkenwell, may favour our correspondent with the details of his procedure in the recent case which he successfully prosecuted.—EDITOR.]

A CORRECTION.

By a printer's error it was stated in our last issue in relation to HER MAJESTY'S NAVY'S VINEGAR CONTRACT.

Messrs. R. & N. Pott Sumner & Co., Southwark, have once more obtained the yearly contract for vinegar for the Royal Navy. This firm was established in 1641. It would be interesting to know if there is any other firm existing now that possesses as old a history. It is truly a long way back in business to the times of Strafford, Pym, and the vinegar-faced puritans.

The paragraph should have read Messrs. R. & N. Pott, 68, Sumner-street, Southwark.

JOSEPH DAVIES, [farmer, Rhyd Broughton, was charged at the Wrexham Borough Police-court, on April 2nd, with adulterating skim milk. The town clerk (Mr. Thomas Bury), who prosecuted, stated that the sample of skim milk obtained from the defendant's son for the purposes of analysis by the sanitary inspector contained 20 per cent. of added water; or, in other words, in the proportion of a quart of water to every gallon of milk. The Bench fined the defendant 5s. and 10s. 6d. costs.

THE INSPECTION OF DRAINS.—At Edgware Petty Sessions on March 28th, Messrs. Gullett Brothers, builders, of Harrow-weald, were summoned, at the instance of the Hendon Rural Sanitary Authority, for contravention of their by-laws by covering up the drains of some new printing works in course of erection at Wealdstone without first giving notice to the building inspector. Mr. B. Wyand, building inspector, said he received notice on the evening of Monday, March 5th, that the drains of the Wealdstone Printing Works were ready for inspection, and four days later, on visiting the place, found them completely covered in. Mr. A. Gullett stated that, owing to the rains, the earth had subsided and the trenches had been filled in. He refused point blank to re-open them or to permit the water test being applied to the drains. Nothing had since been done by defendant to allow of an inspection being made. The defendants pleaded that the earth fell into the trenches, and as the inspector did not come they covered the drains up. They also alleged that the inspector had a "grudge" against them. Mr. Henry Drury, a contractor, was called to prove that the drains were properly laid; but the Bench stopped the witness, and ordered the defendants to open up the drains for examination, and to pay 40s. penalty, with 27s. 6d. cost, for the breach of the by-laws.—The defendants intimated that they should appeal.

At the Southampton Borough Police-court on March 30th, Charles Amey, of 7, French-street, appeared on three summonses issued at the instance of W. G. Powell, inspector under the Sale of Food and Drugs Act, charging him, firstly, with selling margarine as butter, secondly, with exposing margarine for sale without labelling it in accordance with the Act, and thirdly, with delivering margarine to a customer without enclosing it in a wrapper marked with the word "Margarine."—The town clerk (Mr. Nalder) appeared for the prosecution.—The Inspector said he went to the defendant's shop and asked for $\frac{1}{2}$ lb. of butter. Defendant said he only had $\frac{1}{4}$ lb., and it was what was called "No. 9 mixture," but it was butter. Witness paid for it.—The town clerk produced the certificate of the borough analyst, which stated that the article in question was not butter, but margarine.—Defendant, who pleaded guilty to all the charges, said he had only been in business a short time, having previously been a poor-law officer. He had now left the business. He purchased the substance which he sold to the inspector as butter, paying 10 $\frac{1}{2}$ per lb. for it. The Mayor said that taking into consideration the short time the defendant had been in business, they would take a lenient view of the case, and inflict a penalty of 5s. and costs only, in respect of each offence—£1 19s. altogether.—Marina Dean, shopkeeper, of Anderson's-terrace, was similarly summoned. The inspector said when he asked for three-quarters of a pound of butter, with which he was supplied, defendant asked him where he lived, and on his telling her she said "That's a long way to carry butter." When he told her for what purpose he required the butter, the defendant said "I suspected something, and I may as well tell you the truth—it's margarine." The substance was not ticketed as margarine, nor was the article supplied to him in the regulation wrapper.—Defendant, who said she bought the stuff as margarine, and sold it as such, was also fined 5s. and costs in each case.—John Page, restaurant keeper, of Above Bar, was summoned for having in his possession on the 20th inst., a weighing instrument which was seven drachms against the purchaser. Defendant pleaded guilty, but said he was unaware of the defect.—The Bench inflicted a penalty of £1 and costs, and Mr. Ensor then said that he wished it to be known that Mr. Geo. Page, of Ogle-road, was in no way concerned in this case. He mentioned this because one person's name was sometimes confused with that of another.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

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Bonded and
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LENNOX'S WHISKY

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PER DOZEN CASH.

Delivered within London
Carting Circuit, or Carriage
Paid to nearest Railway Station
in Great Britain.

Do not drink Blends of Malt Grain
and Potato Spirit.

Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.

Fretful Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates extracted from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers find that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., 1-lb. sample in handsome enamelled box sent free, on receipt of 3d for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands, Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Affections quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol, Cyprus: "I have never found anything to come up to it for neuralgic and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

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Guaranteed BREWED and free from ANY ADDED ACIDS.

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Food and Sanitation.

SATURDAY, APRIL 14TH, 1894.

AN INQUIRY INTO THE RELATIVE MERITS OF BUTTER v. BUTTER SUBSTITUTES.

IV.

(Continued from page 109.)

THE temperature of the seeding room is not one of uniformity, but ranges between 80deg. and 95deg. F. (27deg. and 35deg. C.).

Besides the oleo-oil, there enter into the composition of oleo-margarine, milk, butter, lard, cotton-seed and sesame oil, occasionally peanut oil, and colouring-matter. The basis of the mixture is oleo-oil. To give this the flavour of butter, it is churned with milk, or milk and butter. Experience has shown that better results are obtained when the milk is slightly sour, and it is therefore kept until it has "just turned." In all places visited, fresh milk was seen standing in a warm room, for use either in that afternoon's or the next day's churning. The butter is added for the same purpose, and, that it may impart a good flavour, must be of good quality in itself.

Oleo-oil is, at ordinary temperature, brittle, and, when cut, crumbles like cheese. To give it a consistency resembling butter, some oil or fat which has a much greater consistency is added, and for this purpose lard and the vegetable oils mentioned are employed. The effect of all these is in the same direction, and they are used in different proportions by different makers. Sometimes lard is used without the addition of any of the vegetable oils. In cold weather more is added to counteract the greater tendency of the oleo-oil to crumble at lower temperatures.

For colouring-matter, annatto is quite universally used.

In the manufacture of oleo-margarine, the fatty substances are melted, and the churning done at a temperature which keeps the mass in a melted state. The ingredients are added at certain stages of the process, according to the method of the maker, but a more or less definite plan is adhered to by all.

In general, it may be said that first the milk is churned until the butter begins to come, when the oleo-oil is added and churned; later, the lard and vegetable oils, and finally the colouring matter. The butter is added in one of two ways—either in the churn, in which case it is melted, or it is mixed in with the oleo-margarine in the solid state, in the process of working. The churning occupies about two hours, and is conducted at a temperature above the melting point of the fats used, or about 80deg. F. (27deg. C.). Toward the completion the temperature is raised somewhat, and when the contents are ready to be drawn it has the appearance of somewhat yellow creamy fluid, being at this time at about 90deg. F. (32deg. C.). It is at this part of the process that one of the greatest improvements has been accomplished, namely, that of sudden cooling by contact with ice or ice water; and, by bringing every particle of the fluid into contact with the ice, it is broken up into a light, granular-appearing solid, and is given the so-called "grain." This is accomplished either by drawing the contents of the churn into a tank containing pounded ice, stirring continually, or by bringing the stream from the churn in contact with a stream of ice water. This chilled mass is then placed in large trays, and the water allowed to drain, when the salt is added, and the mass left to stand from twelve to twenty-four hours, until the salt has been dissolved and thoroughly mixed. From this stage it is handled in much the same way as butter. It is thoroughly worked by passing through wooden-cogged rollers, and is then ready for packing.

Although the process of manufacture of the oleo-margarine differs in detail with every manufacturer, these differences are mainly technicalities. The principle, however, is the same, and involves the two points of Mège Mouriés, and the one of Mott, viz., the

rendering of all fats which enter into the composition at a low temperature, the flavouring of these by churning with milk, the addition of butter, the addition of a sufficient quantity of lard or vegetable oil to give the product a proper consistency, and the sudden cooling of the whole, in order to give it a "grain." In regard to the differences above alluded to, they are chiefly in matters of temperature at which the steps of the process are conducted, in the addition of the ingredients to the churn, and the length of time these are churned, etc. But as the object of the author is to give information in regard to oleo-margarine in general, this mention will be considered sufficient.

SANITARY ASPECTS OF THE CASE.

Having considered the process of manufacture, we can now better judge of the healthfulness of the product, by attention to the substances used, the influence of the method of manufacture, and the product itself, each in its sanitary aspect.

Of fundamental importance is the quality of all substances that enter into the composition of oleo-margarine, for, unless they are pure and wholesome, the quality of the mixture must necessarily suffer. All constituents used in the manufacture of oleo-margarine are commercial articles, and, with the exception of the oleo-oil, are of common household use, finding entrance into our food in many other ways, either alone or in combination with other things. The oleo-oil is more restricted to the use of making artificial butter, yet not wholly so, as it finds considerable favour with those accustomed to its use for kitchen purposes.

With reference to the healthfulness of the oleo-oil, its manufacture, as has been described, may be considered. It is made from beef fat taken either at the time of slaughtering, or from the suet fat taken at the time the beef is cut for ordinary use. In the first instance, great care is taken, not only to obtain the fats in a perfectly fresh condition, but they are allowed scarcely an opportunity for change. The suet fat is taken at the time when the beef is sold for table use, and is then carefully sorted and trimmed, that no part which has been bruised or tainted may be used. The process, simply stated, consists merely in rendering these fats at a low temperature, so low that it is rather a process of melting, and this is the great surety to the strict use of good fats only. It is a necessity that pure sweet material shall be used, for otherwise the product is tainted, even by a very small portion. On the other hand, a higher temperature cannot be used without the risk of imparting to the oil the disagreeable greasy flavour, which destroys its value for this use.

Observation in all places bore out in practical illustration the above. In no case was the material used other than sweet, and also all parts of the process were conducted with cleanliness. All utensils were required to be washed with hot water after each time of using, for, if ever so little were left with the opportunity of becoming sour, the following lot would be spoiled, so readily do the fats take up odours.

It is claimed, quite universally, that the lard which is used for oleo-margarine is of a better quality than much of the ordinary material in the market, which is, nevertheless, pure lard; and that, in the making of lard for this purpose, only the leaf is used. The difficulty in proving this fact is evident, since the manufacturers of oleo-margarine, except in a very few instances, purchase the articles in the market, and these, therefore, come from different sections of the country, so that a satisfactory inspection of parts utilised in the manufacture of the lard used in oleo-margarine would be scarcely possible. Not every manufacturer of lard makes that which is destined for use in oleo-margarine; and the only one in this vicinity, whose brand was used in the factories visited, denied permission to see the process and material. In but one of the places was the lard rendered by the manufacturer of the oleo-margarine. Here the material was seen, and the leaf alone was being used.

Four samples collected at the oleo-margarine factories were submitted for examination. Two proved to be pure lard; the others contained a considerable amount of tallow. That which was rendered by the maker of the oleo-margarine, and one of the commercial specimens, were pure lard.

Of the vegetable oils, cotton-seed and sesame oils are used by far the most. I am told by some of the workmen that peanut oil is still used to some extent in Holland, but here in New England but very rarely.

These two oils it is scarcely necessary to discuss from a sanitary standpoint. The common use of cotton-seed oil has already given it a recognised place as an article of food, and it is familiar to all through its common use. It has no medical properties other than those of a bland neutral oil. Like all articles, however, there may be good and poor preparations, and an inferior grade may result from lack of proper care of the seed before the oil is expressed, allowing it to become musty; but oil made from such, if used in oleo-margarine, would injure the taste. Care was taken to see and taste this oil in the different places, and it was found clear and sweet in each case.

Sesame or benne oil is perhaps less familiar in this section of the country. It is a fixed oil, obtained by expression from the seeds of the *Sesamum indicum*, a native of the East Indies, but now cultivated extensively in the West Indies and Southern United States. The seeds are used as food by the negroes, who parch them, make them into soups, puddings, etc. It was known to the ancients (Persians and Egyptians), and is used by modern Arabs for food. In taste and appearance it resembles cotton-seed oil very closely. It consists of about 76 per cent. of oleine, and has the quality of keeping a long time without becoming rancid.

COLOURING MATTER.

For colouring matter, annatto is quite universally used. This colouring matter is in itself quite harmless, and would become unwholesome only by injurious methods of preparation. The annatto seed is the fruit of the *Bixa orellana*, growing in Guiana, and the colour is obtained from the reddish pulp surrounding the seed, and can be extracted by ether, alcohol, and the oils. For use in oleo-margarine it is obtained by boiling in salad oil, which furnishes a reddish-brown fluid, with a not unpleasant nut-like taste. The colour is intense, and only a small amount is required for a large quantity of butterine.

INFLUENCE OF THE PROCESS.

The process as a whole is the same mechanical one that is used in the making of butter, with the exception that with oleo-margarine the process is conducted at a temperature above, and with butter below, its melting point. The cohesion into a solid greasy mass is obviated, in the instance of the former, by the sudden cooling, which breaks it up into a state of fine subdivision, and in this way it differs from an ordinary melted mass.

The process of manufacture was in every case conducted with cleanliness, and all utensils which were not in use at the time were seen to be clean and sweet.

Thus we have articles used in the composition of oleo-margarine which are in themselves wholesome, and are used for ordinary household purposes. These are mixed by a mechanical process, and at a temperature which does not exceed that of the body, and this process exerts no injurious influence on the product.

The other points which present themselves in this sanitary inquiry of oleo-margarine, are its relative tendency to deterioration, its danger from the accidental admission of parasites, its nutritive value, and its digestibility.

THE QUESTION OF KEEPING.

It is a matter of common observation that, in this regard, oleo-margarine is superior to butter, becoming rancid less readily; and, considering its composition, this would be expected, since it is a mixture of pure fats, and contains but a very small amount of caseine and butyric acid.

PARASITES.

On this agitated question much has been written, not all of it with justice to the subject, there being a tendency, with some, at least, to over-estimate the liability of harm. The danger pertains to two questions—the liability of the parasites to enter into the product, and the danger from the ingestion of the same after having been subjected to the processes used in the making of oleo-margarine and its constituents.

We know that these organisms do at times exist in the animals from which certain of the ingredients are obtained; but what the chances are for these to be transferred into the oleo-margarine is a matter for consideration.

The danger from these organisms comes from the use of lard or oleo-oil which has been made from hogs or bees affected with trichinae, cysticerci, or tuberculosis. The other parasites or germs are so infrequently met with, that they may be disregarded in a consideration which involves only the practical side of the question.

It should be remembered that these substances are made from the same animals that are slaughtered for our ordinary table use, and official inspection will prevent, in a great measure, the use of unwholesome material.

It is only by the flesh of the hog that man incurs any practical danger of trichinae. As is well known, the natural seat of these organisms is in the muscular tissues. That occasionally some are found in fat may be true enough, for, considering their mode of entrance into the muscle, it is not at all unreasonable to suppose that some should fail to reach the muscle, or should be in transition. But the muscular tissue is the part in which we look for and expect to find the trichinae, when they exist, and the fat can be regarded only as a remote or possible source of this infection.

In case any do find their way into the oleo-margarine, the processes to which they are subjected, although not surely fatal to them, yet leave them only a chance of survival. The temperature at which the lard is rendered varies considerably with different makers, but in most cases is sufficient to give protection against infection. In order to be secure against trichinous infection, it is necessary that the whole mass should be subjected to a temperature of 65deg. or 70deg. C. (150deg. or 160deg. F.), and a lower temperature is considered by some authorities sufficient to render trichinae inactive. Ordinarily, in the manufacture of lard, the temperature would be fatal to them, but in the manufacture of oleo-margarine and its constituents, too high temperatures are avoided, and with this there will be the chance that protection may not be secure. But the oleo-margarine still has another process which is injurious to the trichina, namely, the salting. If thoroughly done and for a long time, a salted article is proof against trichinae. Oleo-margarine contains, as a rule, about five per cent. of salt, and although we can scarcely conclude that this amount would protect a highly infected article, yet it can be regarded to a certain extent as protective.

The cysticercus is the immature tape-worm, developed from the ovum of the tænia, and when ingested becomes in the intestine a fully developed tænia. The eggs of the tænia, finding their way into the alimentary canal, are transported to different parts of the body, where they develop into their immature state, or larvæ, called cysticerci, their complete development into tape-worms taking place only when the flesh containing them is eaten, and they find their way into the alimentary canal. This circle is ordinarily maintained by transference among animals.

There are but two kinds of *tænia* which are commonly found in man—the *tænia solium*, and the *tænia saginata*. The former is acquired by eating the flesh of hog containing its corresponding cysticercus, and which, when present in large numbers, produce in pork the condition characterised as measles—the latter, a parasite of the ruminants, is acquired by man by eating beef so infected.

Since the flesh of these animals form so large a part of man's food, the *tænia* is the form most commonly met with in man; the ova necessarily having much less opportunity of entrance, the cysticercus is less frequently seen. But it is the ingestion of the larvæ with which a consideration of oleo-margarine has to deal. With regard to the chances of these entering into the product, the same is true as of trichinæ. The parts used in the manufacture of oleo-oil are not the natural home of these larvæ, but the same danger exists of stray ones. The temperature used in the extraction of the oleo-oil gives more protection, although with the original process of Mège Mouriés a temperature of 124deg. F. (51deg. C.) was not exceeded; but the present manufacturers use a much greater heat, and for a considerable time. The danger which results is far less than with trichinæ, as the effects of the *tænia* on the human system are much less injurious.

TUBERCULOSIS.

This topic is intended to represent not only tuberculosis, but the various epidemic diseases which prevail at times, and which are now quite generally accepted to be caused and spread by germs. The relation that many of these bear to tuberculosis, and how many are attended with tubercular deposits, the author would not venture to state from information obtainable at present. These epidemics have been known by so many different names, which have been used with such a general significance, that to separate them into distinct types, by any pathological classification, and as such to consider them, would not add clearness to the discussion or accuracy to the observation. Their influence, so far as the effect of the consumption of the fat of their victims is concerned, is in the same direction, so that to consider them collectively is proper, because they all have pronounced and more or less characteristic symptoms, and manifest themselves in constitutional disturbance, that betrays the existence of the disease in the living animal to even an unskilled observer. The ingestion of the flesh of the infected animals is liable to be followed by sickness, and in the epidemics which have prevailed, the effect of eating the flesh was an increase of severe diarrhoeal disorders.

Against danger of this source, conveyed through the fats used in oleo-margarine, we must look to the general inspection of the condition of animals brought to slaughter. The evident presence of diseases of this class is favourable to the enforcing of such regulation; but oleo-margarine has but a small share of the interest in this general question, and should be fully protected by those restrictions on the killing of any animal intended for use as food.

NUTRITIVE VALUE.

A very important consideration in this question of the healthfulness of oleo-margarine is that of its nutritive composition, its value in supplying the necessary principles of a food; and in this regard Prof. Atwater has made a valuable contribution. In Bradstreet's (June 19th, 1886), he says: "The value of butter, as well as of any other food material for nourishment, depends upon the amount of its nutritive ingredients, their digestibility, and their uses in the nutrition of the body."

He has published in the *Century*, tables showing the comparative value of different foods, viewed from various standpoints. In many of these comparison with butter is made.

In regard to the nutritive value, the amount of solids in butter is between one and two per cent. more than in oleo-margarine, this being made up mostly by proteids, and the remaining fraction of a per cent. by fat (calculated from measurements of the tables).

Thus, in their nutritive composition, butter and oleo-margarine are practically the same.

The other tables have reference to the relative cost, calculated from the amount of nutrition obtained for a definite sum, and, although of no less interest, yet perhaps have less bearing on our

present subject; but, from this monetary view, they are very important, since it is the working man who is in the greatest degree affected by oleo-margarine. These tables represent the amount of nutritive elements obtained for a definite sum, in the different kinds of foods, and the amount of potential energy furnished by the various foods, for the same sum. Fat is the only nutritive ingredient furnished by either butter or oleo-margarine to a practical amount. The amount furnished by oleo-margarine is twice that by butter. The potential energy, expressed in calories, in oleo-margarine is 6,164, in butter 3,182. Therefore, as a monetary consideration, oleo-margarine and butter supply almost the same amount of food material, and, for the same money, oleo-margarine yields nearly twice the amount of food principles as does butter.

In this question of the healthfulness of oleo-margarine, the consideration of its digestibility is a most important factor. So far, but little more than individual opinion and certain isolated facts are known concerning the digestibility of different fats. It is scarcely possible to consider this point with reference to oleo-margarine without drawing comparisons with butter, with which it is always associated, and concerning which there is at least a practical knowledge of its value as food. To class it among the fats alone would give no idea of its value as a healthy food, as they differ to a great extent, and digestion and assimilation vary so much both with the kind of food and with the individual. In the few experiments which have been made to compare the absorption of oleo-margarine the results have been slightly in favour of butter. Those of Meyer gave preference to butter by 1.6 per cent., but they were conducted for so short a time that the results are not of great value. However, all others give similar results. In Bradstreet's, Prof. Atwater mentions experiments made by himself and Rubner, which resulted in no calculable difference, and in no case was there more than is allowable for error.

The results obtained by artificial digestion are of no indication of the amount which may be absorbed, nor of the actual results of natural digestion, yet they are of value if used comparatively; since, if all the substances used are subjected to the same conditions, the degree to which they resist or yield to the action of this artificial digestion will be a means of estimating the results of natural digestion of the same substances. In this way can we judge of the result of the action of pancreatic fluids on the fat, but the absorption must depend more or less on individual differences, and is a process scarcely practicable to imitate.

Speaking broadly, the object of the process of digestion is to change the food into such a form that it may be absorbed and pass into the system. Different nutritive principles require different processes for this preparation, such as the starches, proteids, and fats. This preparation of the fats consists in breaking them up into a state of fine subdivision and suspending them in a medium to form an emulsion. In this finely-divided state fat is absorbed by the intestines, and may be found in the vessels to have been absorbed without further change than the division, and by the microscope is seen to be in minute globules of about $2\frac{1}{2}$ m.m.m., and under; therefore, the essential feature in the process of the digestion of fats is the formation of a fine emulsion.

This emulsion is produced by a ferment contained in the pancreatic juice, and, as this is easily extracted, this same process of emulsifying may be produced in an artificial manner. The pancreatic juice, acting on the fats, splits them up into their respective fat acids and glycerine, and this takes place much more readily in an alkaline medium. The free fat acid combines with the alkalies which are present, and forms soluble soaps, which aid in the emulsion of neutral fats; at least, the presence of a soluble soap favours the emulsion of neutral fats. It is stated by Foster, and is repeated by Dr. Clark, in the second report of the New York Dairy Commissioner, that a fat containing a free fatty acid forms an emulsion more readily than a neutral fat. In the intestines we have this condition, which is most favourable for the emulsion of different fats, for the pancreatic juice supplies free fatty acids, while both pancreatic juice and bile furnish the alkaline medium. The presence of bile favours this process, if nothing more, and presumably also the subsequent absorption of the emulsion.

(To be continued.)

HORLICK'S
MALTED
For Infants
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MILK
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

ROUGH ON CHICAGO.

THE *Evening News and Post* says: "Mr. Stead has been interviewed. He says he means to go back to America and make a long stay. That is encouraging."

MARGARINE ACT PROSECUTIONS.

AT Stratford, Maria Pooley, general shopkeeper, of Glenny-road, Barking, and William Hazeldon, of Ley-street, Ilford, for exposing margarine for sale without labelling it, were each fined 5s. and costs.

AN INFANT WITH A TAIL.

DOCTOR JULIAN BERRY writes the *Memphis Medical Monthly* that on attending an accouchement he was surprised to find the infant "blessed with a tail—a nice, well formed tail—a tail just where a tail ought to grow—a five-inch tail." Amputation was "reluctantly performed."

TEMPERANCE SHERRY.

ACCORDING to the *Medical Press*, the Glamorganshire public analyst reports on a so-called "British sherry" which fell into his hands, that it was composed of sugar, a little essence (?), and calcium bisulphite. As it contained no alcohol it may perhaps receive the sanction of the temperance interest.

A VINEGAR CASE.

AT the Sheffield County Court on April 5th, Thomas Congreve Marshall, drysalter, 77, Morpeth-street, trading as the Sheffield Vinegar Brewery Company, claimed 15s. 4d. from Mrs. Maria Hildred, grocer, 85, Petre-street, for a cask of vinegar supplied. Mr. A. Neal was for the plaintiff, and Mr. H. Ashington for the defendant. The vinegar was returned on the ground that it was not pure malt vinegar, but diluted with acetic acid, and the defendant filed a counter-claim for 15s. 4d. for cask, cartage, and the vinegar sent back. No certificate of analysis was put in, and plaintiff swore that the vinegar was made from malt, although he declined to state how much acetic acid it contained. It was stated in the course of the hearing that four of the plaintiff's customers had been convicted under the Food and Drugs Act for selling his vinegar as malt vinegar. The traveller alleged to have sold the vinegar as pure malt vinegar, and who advised the defendant to send it back, was not called.—Judgment for the plaintiff on the claim and counter-claim.

MORE ARSENIC IN GLYCERINE AT LEEDS.

THE report on analyses made for the City of Leeds during the quarter ending March 31st, 1894, by Mr. T. Fairley, borough analyst, shows that the samples received have been:—Milk, 36; butter, 7; green peas, 1; ale, 2; glycerine, 8; total, 54. Seven of the samples of milk were adulterated with 20, 19, 17, 16, 15, 14, and 9 per cent. of water respectively, as compared with the lowest quality of genuine milk, and five were reported to be of low quality. One sample of butter contained 24 per cent. of water, being at least 9 per cent. more water than is found in the lowest qualities of genuine butters. Two butters contained foreign fat, one as much as 40 per cent., whilst in the second case traces only were present. Two of the samples of glycerine contained white arsenic, amounting to a little less than two grains per pound, two contained traces of arsenic too minute to be of any practical importance, while four were free from arsenic. Mr. Fairley says, "I believe that the bulk of the glycerine manufactured in this country is free from arsenic, and there is therefore no sufficient reason to excuse its presence in these cases, or to permit the sale of any poisonous glycerine." The other samples were reported free from adulteration.

FERTILISERS AND FEEDING STUFFS APPOINTMENTS.

THE sub-committee of the Inverness County Council entrusted with the appointment of an analyst have queer notions how such should be made. At its last meeting there were present Mr. Alexander Fraser presiding, Mr. Shearer, Mr. P. G. Macdonald, and Mr. Macbean. Ten applications were received, and without any of the testimonials being examined, the Chairman moved the appointment of a Dr. Marshall, whose qualifications, he said, were well known.—Mr. Shearer: I am sorry I have never heard of the man.—Mr. William Anderson: I may tell you that none of the testimonials have been submitted to the committee.—Mr. Shearer: I think this is an appointment where we should know something more than that a name should be brought up and jumped at in this haphazard way.—The Chairman: What do you propose to do then?—Mr. Shearer: I propose that no permanent appointment be made at this meeting. It was all very well, he said, to have a private knowledge of a gentleman, and although he had not the least doubt that Mr. Fraser would not lead them astray for a moment, he thought that acting for the county they should know something of the other applications that were before them. (Hear, hear.) It was then agreed to postpone the appointment for a week, the testimonials of the respective applicants to be meantime perused by the members of the committee.

SPIRIT OF NITRE CASE.

AT the Aylsham Petty Sessions, on April 3rd, before Mr. C. L. Buxton and other magistrates, Major Maude, of Aylsham, druggist, was summoned under the Food and Drugs Act, 1875, for selling to Inspector Chambers, on February 27th last, spirit of nitre not of the nature, substance, and quality of the article demanded, and to the prejudice of the purchaser. Mr. Louis Tillet, of Norwich, appeared for the defence. After the case for the prosecution closed, Mr. Tillet intimated that he should, for the purpose of convenience, divide his defence into two branches, the one dealing with technical points of law arising on the purchase and analysis; the other being a total denial that the drug in question was adulterated, and not of the nature, substance, and quality of the article demanded. Mr. Tillet stated that he was confident that the defence on the merits must succeed, but with a view of saving the time of the Bench he would take the technical objections first, and added that if the Bench decided in his favour on any one of the technical points raised, the case for the prosecution must fail. The Bench concurring in this procedure, Mr. Tillet then addressed them at considerable length on the points of law. At the conclusion of his address the Bench retired to consider their decision. On their return, the Chairman stated that the Bench agreed that one of the technical defences urged was fatal, and the summons would therefore be dismissed. Mr. Tillet asked for costs, pointing out that the real prosecutors were the County Council, who could well afford to pay, but the Bench, after again retiring, declined to grant costs.

THE BEEF STEARINE IN LARD CRUSADE.

AT a meeting of provision dealers at Bristol on April 4th, Dr. E. H. Cook said, as far as he remembered, only one case in reference to adulteration had come under his notice during the year in Bristol, and that was lard. He happened the other day to have a communication from large refiners in America, and that firm set on foot some experiments and made up a series of mixtures of lard and other articles,

These were sent round purposely to the various towns in England, Scotland, and Ireland, and also on the Continent. They knew the composition of these articles, and furnished him with a list of results of the various articles. Their pure lard was returned in many cases as being heavily adulterated; the mixture made with a small quantity of adulterant was returned sometimes as pure and sometimes as adulterated; and that which was heavily adulterated was returned sometimes as pure and sometimes slightly adulterated. He knew that statement was not at all a statement which was beyond the truth, and it was within the truth. But in reference to that case of lard he really thought the problem was one which required attention being given to it by a representative body who could give more attention to it than a bench of magistrates, even though as able as the Bristol Bench of magistrates. (Laughter.) It was a question of imperial interest, as the adulterant was chiefly beef stearine. As an article of food there was not the slightest advantage in pure lard over beef stearine. The addition of beef stearine could not be said to be injurious to health, nor could there be said to be an extra profit obtained, as the prices were about equal. He admitted that they were legally responsible if they sold such a mixture; but it was a point for the central association to have some modification of the law which would hurt no one at all, which should protect the public and at the same time enable the refiner to sell an article which would stand the wear and tear of transmission from where it was obtained to where it was sold.

DOCTORING CIGARS.

REGARDING a new mode of doctoring cigars, a writer in the *Sued Deutche Tabak Zeitung* says: "Herr Hans Trede, of Hamburg, has succeeded, we hear, in solving the problem as to how to improve the quality of tobacco. The invention consists of an almost colourless fluid, with which a portion of the tobacco to be used, particularly the covers, is moistened. The effect is immediate and lasting. The cigars burn better, and taste and smell are so improved that they satisfy the requirements of an epicure. This was proved, we hear, in the presence of a large number of smokers and experts. The inventor's method of convincing anyone is simple and effective. He begs for a cigar of low quality, pours several drops of the fluid on the table or on a plate, turns the cigar round several times in the fluid, and offers it to some one to smoke as soon as the outside is dry. The colour of the tobacco undergoes no change."

SOPHISTICATION OF ALCOHOL.

THE new regulations established in France, relative to the sophistication of alcohol destined for industrial use, prescribe the addition of a small quantity of green malachite to mixtures of wood alcohol and benzine. Though the colouration thus produced is very slight, it may nevertheless interpose an obstacle to the employment of sophisticated alcohol in a host of industrial uses, such as the tinting of flowers and feathers, the colouring of metals, the saturation of celluloid, the brightening of varnish, etc. This colouration may be readily overcome in several ways; one of the simplest consists in adding to the alcohol several drops (3 to 4 per litre) of a concentrated solution of lime hypochlorite or of sodium until the green colouration has disappeared. If carefully added, the alcohol will exhibit no trace of the hypochlorite after the operation, all the active chlorine of this salt being consumed in the radical destruction of the colouring matter. Be the subsequent treatment of this alcohol what it may, the green colour cannot be restored. And since the operation has simply introduced traces of chlorides—inactive salts—into the alcohol, since its strength has not been reduced, and since its properties have been in no wise modified, it may be used for all industrial purposes without inconvenience.

THE DUNDEE MILK SUPPLY.—During the past quarter the Dundee City Analyst examined, on behalf of the Police Commission, 44 samples of milk. Of 41 samples of sweet milk 39 were genuine, 1 was adulterated with water to the extent of 5 per cent., and 1 with water to the extent of 16 per cent. Of 3 samples of skimmed milk examined one was found to be watered.

GLOUCESTERSHIRE C.C. AND ADULTERATION.—The County Analyst, Mr. George Embrey, reported that 110 samples had been tested during the quarter, and four only were found to be adulterated, one being a case of milk to the extent of 17 per cent. added water, and the other three whiskey samples, which proved to be from 35.5 per cent. to 33.3 per cent. under proof, instead of 25 per cent. Fines were inflicted in each case.

HOLLAND COUNTY COUNCIL.—The quarterly meeting of the Holland County Council was held at the Sessions House, Spalding, on April 9th. The quarterly report of Mr. C. H. Southwell, the county analyst, was presented, showing that 17 samples had been analysed during the quarter, of which only one was adulterated. This was a sample of rum, and was found to have been reduced to 27.59 per cent. under proof by the addition of water.

THE HALIFAX BOROUGH ANALYST'S RETURNS.—The annual report of the Halifax Borough Analyst (Mr. W. Ackroyd) states that during the year 129 samples of foods and drugs, and nine samples of water, had been analysed. Of these seven samples were adulterated and six were of a doubtful character that is just outside the limits for which a prosecution could be instituted. There were three cases of adulterated coffee, two of adulterated precipitated sulphur, one case of adulterated butter, and one of adulterated milk. Seventy-six of the samples examined were milk. Of the 14 samples of butter analysed one was margarine, and three out of nine of coffee examined had small amounts of chicory present in them. Three samples of vinegar purchased for analysis were found to be genuine. Of the nine samples of water analysed two were passed as free from pollution. The remaining seven were all more or less contaminated and unfit to drink.

ANALYSES OF SOME ETHICAL PATENT MEDICINES.

By H. W. SNOW, P.H.C.

It is not proposed in the following paper to give elaborate details and methods employed for this work, but rather to give the results of work. It is sufficient to say that the methods employed were those generally considered reliable, or in special instances had been demonstrated by my own experience to be satisfactory and accurate. It is hoped that in these reports you will find interest and possibly instruction, and if so, then my object is achieved. Properly speaking, the ethical patent medicine line may be broadly divided into two divisions, viz., those having a reason for existence, and those having no true therapeutical reason for existence. For instance, Cascara Cordial in its day and Cascara Aromatic at present fill a real need, and offer advantages for the administration of cascara not possessed before their introduction. On the other hand, we can point to scores of proprietary articles of the Bromidia, Tongaline, and Listerine type having very little to recommend them for a permanent place in pharmacy.

Bromidia was examined by Lyons some years ago, and since then I have had opportunity to verify his work. The conclusions reached were, that it contained scarcely two-thirds' as much bromide of potash and chloral as claimed, and no cannabis indica at all. On the other hand, there is evidence to lead one to believe that it contains narcotics not named in its alleged formula. Likewise Iodia, claiming potassium iodide five grains, and iron phosphate three grains per fluid drachm, with vegetable alteratives and aromatics. Both the writer and Lyons failed to find more than about three grains of the iodide and only traces of iron in each drachm. Lithiated Hydrangea is said by its proprietors to contain green hydrangea root and three grains of pure benzo-salicylate of lithia in each fluid drachm. If this means anything at all it means three grains of the combined salicylate and benzoate of lithium. Careful work failed to show but little more than one-seventh of this amount.

The claims for Listerine put forth by the same company are familiar to you all, but these claims being rather vague it is difficult to say more than that it can hardly be credited with any very satisfactory antiseptic value.

Phillips' emulsion was found to contain $7\frac{1}{2}$ fluid ounces of oil per pint. It is a gum emulsion, and contains two ounces of glycerine to the pint, and some sugar.

Hydroleine, another emulsion, shows many peculiarities. For instance, it is precipitated by dilute acids but not by alcohol, showing that it contains no gum and is, on the other hand, either a soap emulsion or has been treated with an alkali, which amounts to the same thing. The oil shows the peculiarity that after its extraction by ether it forms a partial emulsion on shaking with pure water. The proprietors claim that the oil has been predigested by the aid of pancreatin, but as I have never yet found a pancreatin worth anything at all as an emulsifying agent, and never met anyone who had, I prefer to doubt this claim. I do not regard such an emulsion as a desirable form for the administration of cod-liver oil, because it curdles in the stomach immediately on contact with the gastric juice, and is no better tolerated than a plain oil. I have known it to be repeatedly thrown up by patients using it. It, however, contains the unusually large proportion of $10\frac{1}{2}$ ounces of oil to the pint.

Another emulsion formerly offered the trade, but I believe now withdrawn from sale, contained seven ounces of oil per pint, and some glycerine. I regard it as probably the best all-round emulsion then offered, but it did not keep very well.

COOL STORAGE AND COGNAC.

THE gifts of science to commerce are incalculable, and are ever receiving fresh additions. The latest example is interesting in its way, because it seems to be the practical firstfruits of those elaborate experiments in very low temperatures which Raoul Pictet initiated and Dewar has followed up. It relates to the formation of cognac. Connoisseurs dream with envy of those exquisite *finer champagnes* for which the industrious fathers of the Grande Chartreuse are famous. The fathers, being men of means, can afford to do what very few firms care to—namely, lock up capital in large quantities of the best *eau de vie* for ten years at a time. This protracted storage in cool vaults results in the perfect cognac with inimitable bouquet. Inimitable hitherto. Raoul Pictet has, however, tried cooling *eau de vie* by progressive stages down to a temperature as low as 200 degs. C. At this point the alcohol becomes buttery and semi-crystalline in substance. Upon being restored once more to its normal temperature, the fluid is found to have acquired the bouquet of *fine champagne* of ten years' growth. The expense is insignificant compared with the result—not more than a quarter or half a franc per litre.

An Italian college of vinology, at Avellino, has submitted samples of home-produced brandy to M. Pictet for test, and the results, published as yet without analysis, are very promising. Our knowledge of alcohol is still imperfect, and the constitution of brandy, according to an expert in *Cosmos*, is very complex, including, besides ethylic alcohol, certain higher alcohols in small quantities, aldehydes, acids (esp. acetic), glycerine, introduced by the hydro-alcoholic vapours during distillation, colouring and aromatic matters, especially vaniline. Possibly it is the accelerated transformation of the aldehydes and acids that produce the peculiar bouquet.—*Pall Mall Gazette*.

PURE COCAINE.

THOUGH Cocaine has been known as a valuable agent for some years, it is only lately that knowledge of the physiological effect of its accompanying amorphous bases has been materially widened.

Concerning the principal alkaloid Cocaine *per se* it is not necessary to speak, because it is familiar to the medical profession the world over in the form of a salt; but of the number of so-called secondary or amorphous alkaloids, chemists even at this late date are somewhat doubtful. There are known to be several, and recent researches on the part of Liebermann, Liebreich, and others, prove that one of these amorphous alkaloids, viz., Iso-Atropyl-Cocaine, is a most violent cardiac poison. This alkaloid occurs in coca leaves in a very minute quantity, as a rule, but some specimens contain far more than others; its separation is most difficult, and it enjoys the reputation of being the least easily detected of all the coca bases. Even if we were not positive that the secondary bases exhibited a pernicious effect, they must be looked upon as suspicious, and a Cocaine demanded from which they are removed. As a matter of fact, we do know that the presence of even small quantities of these amorphous bases is responsible for untoward and seemingly inexplicable results that often follow upon the administration of supposedly pure Cocaine preparations.

Recently the editor of the *Medical Age* learned of two apparently mysterious deaths which were in reality the result of the use of impure Cocaine by dentists for its benumbing effect in the extraction of teeth—in both cases the drug was injected into the gum. In one instance death occurred within a few hours after the teeth were drawn; in the other, the lady lingered for about thirty-six hours, and all the resources of the medical art were unable to stimulate a heart that had been fatally poisoned owing to a preponderance of Iso-Atropyl-Cocaine.

Such facts as those just cited should prove sufficient to put the practitioner on his guard, and induce him to demand a Cocaine that is free not only from secondary alkaloids, but from such inorganic substances as sodium, calcium, etc., that are necessarily employed in the process of manufacture.—*Medical Age, Chicago*.

CORRESPONDENCE.

PROCEDURE AGAINST WARRANTY-GIVERS.

April 10th, 1894.

SIR,—I have great pleasure in assisting a colleague in his duties.

In the case of *Bartlett v. Whittorne*, I had the guard of train that conveyed milk from Whittlesea to Great Eastern terminus, Liverpool-street; the carman who received it and delivered it at the dépôt of milk company, the foreman who received it at the dépôt, the foreman of milk carriers who delivered it to the carrier who actually sold it to me. The milk had passed through all these men's hands, and each swore that they had not tampered with the milk. I called the secretary of the company, who proved a contract to deliver milk pure, new, and with all its cream, the carmen who received at the station also proved that the churns containing the milk had labels attached bearing the words "Warranted pure unskimmed milk."

The form of summons was "that you on December 17th, 1893, gave a false warranty in writing to the Farmer and Cleveland Dairy Co., whose office is situate at Islington, London, in respect of an article of food, to wit, milk sold by you."

In conclusion, the only trouble is to prove that it was sold in the same state as received.

Trusting this will be of assistance to J. H. C.—I am, faithfully yours,

W. J. BARTLETT.

Vestry Hall, Clerkenwell.

58, Rosoman-street, E.C.

FOR selling adulterating gin, William Thomas Yelland, of the Miners' Inn, Rejarrah, Perranzabuloe, was fined £1 and costs at Truro on March 31st.

IN the House of Commons on April 4th, Sir C. Cameron's Bill to amend the Sale of Food and Drugs Act, 1875, and the Margarine Act, 1887, was read a first time.

Three Highest Awards, Chicago, 1893.

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KINGZETT'S PATENT SULPHUR CANDLES.

Pamphlet Sent Free.

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THE GREAT PORK PACKING HOUSE OF NELSON MORRIS AND COMPANY, CHICAGO.

THE centre of the meat-packing industry of the United States is Chicago. It is by far the largest shipping point for dressed beef and canned meats, and it also maintains a decided lead in the handling of hog products. The operations of the Stock Yards and packing houses are, therefore, of interest to every one who visits this great city, and the packing houses became almost as much a point of attraction during last summer as the World's Fair. Thousands upon thousands of visitors went out to see the Yards, and made one of the great packing houses the objective point of their visit. The large packers are always glad and ready to have strangers go through their establishments, since there is no secret in their method of handling the porkers, and they give all possible facilities to visitors by placing guides at their disposal, who explain the workings in each and every department.

Most of the hogs handled in the packing houses of the West are grown in Illinois, Iowa, Kansas, Missouri, Wisconsin, Nebraska, Ohio, and Indiana. When a train of cattle or hogs arrives by rail a notice is posted in the office which each railroad has at the Stock Yards, showing the consignor, consignee, and the number and description of the live stock received. After the cattle or hogs have passed the health officer they are taken possession of by the Stock Yard Company, which pays the freight and puts the stock in different pens, according to ownership. When the cattle or hogs have been conducted to their pens the buyers of the packing houses examine the stock and put a price upon it. They exercise the right of selection, and rigorously exclude any animal which appears to have been injured, or which seems in imperfect health or condition. There is a weigher in attendance on each buyer, who follows the animals when they go to the scales and subjects them to further scrutiny. The hogs are driven to the packing house over long elevated wooden chutes or driveways, substantially built and roofed over, which lead directly from the pens to the slaughter-houses. There is but one way in which animals intended for human food can get into the packing house, and that is alive and on their feet. From the time they enter at the slaughtering end until they emerge on the other end dressed, cured, salted, or canned, there is a continuous chain of manipulation carried on which could not be broken in upon without disarranging the whole course of business and attracting general attention.

If our readers will accompany us through the enormous packing house of Nelson Morris and Company, which is one of the largest at the Yards, they will get an idea how the hog is handled before it becomes palatable and ready for the table. This firm has two separate plants in the Union Stock Yards, Chicago—one for their hog slaughtering and pork branch, and one for their cattle slaughtering and beef branch. At the pork packing house their hogs are received in the manner above described, and are allowed a time of from 24 to 48 hours when received for rest, feeding, and watering. After that period has elapsed a man, known as the shackler, enters the pens and shackles by the hind leg each of the unsuspecting animals. The hog is quickly drawn up by machinery and sent sliding along to a platform where stands the "sticker," knife in hand. With marvellous celerity he plunges the sharp-pointed, keen-edged weapon into the animal's gullet, and with a touch of the hand sends the dying hog sliding a few feet further. There it is allowed to hang, squealing with scarcely abated vigour, for about five minutes, until all the blood has drained from its body, and thereafter it is plunged off the end of a rod into a cauldron of boiling water, in which it is immersed just long enough to loosen the hair from its hide. Next it is lifted out of the scalding vat by an ingenious automatic contrivance and landed on the draining-table, where it is connected with an endless chain and enters at the lower end of a cylindrically-shaped upright scraper, returning through another cylinder of the same kind. This machine in a very few seconds scrapes every vestige of hair from the accessible parts of the skin.

When the hog emerges from this treatment it is drawn upon a long table, where from first to last sixteen men (eight on each side) await its coming. Two of them shave the few bristles which the scraper has been unable to reach. The next man at one stroke severs the head nearly from the body, leaving it hanging only by a shred. His assistant, meanwhile, has cut two slots in the hind legs and thrust a "gambol stick" into the holes thus made. He then slips one end of a double hook round this gambol stick, and with a gentle shove starts the hog again upon its travels. Ten minutes have so far sufficed to transform a well-fed, contented hog into a headless, hairless carcase. All the time it is running the gauntlet a stream of cold water is continuously pouring down upon the animal, and washing away all traces of the cutting and slashing to which it is being subjected. The next man at the cutting table opens the animal and takes out the paunch and intestines, etc., while another removes the leaf fat, subsequently to be used in making "neutral" for oleo-margarine. A little further along another operator "faces" the hams—that is, with a sharp-pointed knife he traces on the hide the shape of the hams which are eventually to be cut. By this time the hog has journeyed about twenty-five feet from the scalding vat into which it was first plunged. At this point the head is completely detached, the tongue is taken out, to be canned for lunch purposes, and the head is either singed and made into English brawn, or the cheek meat is cut off and the rest rendered into lard, according to the price which either commodity commands in the market at the time. The carcase is pushed along a little further, and a skilled hand marks a line down the back to guide the chopper. The gambol

stick is removed; a boy pulls a rope tied to one of the hind legs, so as to stretch the legs apart, and the chopper, with a meat axe, divides the headless carcase into halves down the middle of the spine. It is then carried on runners to the hanging room, where it is allowed to remain till the last vestige of animal heat has departed prior to its being taken to the chill room. This last noted regulation is a most necessary and carefully observed precaution, for if the carcase were immediately conveyed to the chill room, the cold air would congeal the outer flesh, leaving the animal heat within, and the meat would sour in the curing.

The next process occurs in the chill room, already referred to, which is kept at a temperature of about 36 degs. F. all the year round. The best results are obtained by artificial refrigeration, as natural ice, gives less uniform results. The defunct hog after remaining here about 48 hours is hauled out and dropped upon the chopping block, where the ham, the shoulder, the side, and other cuts are divided off ready for curing. Every part of the animal is utilised. The lean meat trimmings go for sausages, the feet are pickled or canned, the ears, etc., made into glue, the blood into fertiliser, the intestines into sausage casings, and the bristles and hair into brushes, etc. What remains after this subdivision is tanked for soap grease, and the residuum therefrom is made into fertiliser.

The curing arrangements follow next. The meats to be cured are taken to a dry flaged chamber having a temperature of about 40 degs. F. and perfectly dark. Here the various cuts are assorted according to weight, etc., the hams being thereafter sprinkled with saltpetre, salt and granulated sugar. At the end of ten days these are turned and resprinkled and left to cure for 20 or 30 days longer. Here also the mess pork is cut into uniform pieces and packed in barrels. When the hams, etc., are first received in this chamber they are carefully cleansed and inspected for signs of imperfection. The pieces found perfect go back to the chill room for about 24 hours. These are afterwards brought out and packed in tierces in a pickle for 60 to 75 days.

The next, and final, process is that of the smoke-house. This building is of solid construction, divided into floors by movable racks, and having a fireplace in which maple or hickory wood is kindled. The smoking generally takes 48 hours, and when that is over the hams are ready for market. The great bulk of the cured meat remains in pickle for various periods from 35 days upwards, the minimum time being sufficiently long to completely destroy all germ life possibly contained in the meat. Purchasers of goods from Nelson Morris and Company can at any time have their meats inspected before delivery by officials of the Chicago Board of Trade.

The canned meats (including corned beef, roast beef, ox tongues, soup, etc.) are sent out under the label of the Fairbank Canning Company, and are distributed throughout every part of the civilised world. We close our description with a few figures showing the volume of business done by Nelson Morris and Company (including the Fairbank Canning Company) in 1893: Total number of cattle, hogs, and sheep handled, 1,514,107. Total amount of meat canned, 61,000,000 lbs., and of sausage made, 9,587,000 lbs. The house has 175 branches in the United States, and its employees number 8,000, with a yearly pay roll of 4,250,000 dols. The distributive sales for 1893 reached the enormous figure of 86,000,000 dols. Such statistics supply the dimensions necessary to enable one to form a just idea of this plant.

ADULTERATION OF TOBACCO.

A WRITER on the adulteration of tobacco says that nitre is added in some cases in order to make the leaf burn better. This substance is greatly to be deprecated, and is especially harmful to persons who suffer with chest ailment, inasmuch as it is not destroyed by the burning leaf during smoking. The common idea of adulterating tobacco is that cabbage leaves and waste-paper are used for the purpose. But neither is ever used, and for this simple reason, that many of the commoner kinds of tobacco leaf are so cheap that there is no inducement to use any other substance. The method of adulteration is practically to substitute cheap, common, coarse kinds of leaf for better, and this is easily accomplished in rolled tobacco and in cigars.

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Is guaranteed BREWED solely from
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This Beer is SPECIALLY RECOMMENDED TO
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THE PURITY OF FOOD IN CHESTER.

DEALERS in Chester until lately have been at liberty to sell margarine as butter to whatever extent they choose. Mr. Hallard, the Cheshire County Council Inspector, has therefore done well to rouse the Chester authorities to a sense of their duty to the public. Test purchases made from five or six Chester grocers led to Alfred Evans, grocer, 85, St. Anne-street, Chester, provision dealer, being summoned at the Chester Petty Sessions, on April 7th by Wm. James Hallard, inspector of weights and measures for the Wirral district, for selling margarine as butter. There was a second summons against the defendant for supplying the inspector with 1lb. of margarine without having the word "margarine" printed in capital letters on the package wrapper. Mr. Frank Turner appeared for the prosecution, and Mr. E. S. Giles for the defence.—Mr. Turner explained that the inspector lived in the county, and the defendant's shop was in the city, but under section 20 of the Food and Drugs Act the magistrates had jurisdiction because the section pointed out that proceedings could be taken in the township where the goods were delivered. The assistant to the inspector was sent to Evans' shop in St. Anne-street, and ordered some provisions, including butter. The goods were delivered at a house in Newton by one of defendant's boys, who consented to the butter being examined by an analyst. The county analyst certified that the sample was not butter, but margarine. John Bracegirdle, assistant to Inspector Hallard, and employed by the County Council, stated he was sent to defendant's shop in St. Anne-street for several articles, including butter, with an order from "Wm. James, South Avenue." An errand boy brought the goods to South Avenue, and the butter purchased was divided into three parts.—Inspector Hallard deposed to sending an order to defendant's shop for butter under the *nom de plume* of "W. James, 3, South Avenue." He sent a part of the butter to Dr. Carter Bell, who certified that the alleged butter was margarine. Mr. E. S. Giles contended that there was no case against his client. He objected on the ground of jurisdiction, and also on the ground as to where the sale took place. Another question was, did the inspector, as required by the Act, notify the defendant that the goods purchased were to be delivered to the public analyst? He did not. The defendant in this case was not notified.—Mr. Turner urged that the boy who consented was defendant's agent, and he (Mr. Turner) supposed the defendant was afterwards acquainted with the fact that the goods were purchased for the analyst.—The Chairman said the Bench had made up their minds on the subject that the defendant had not been notified as required.—Mr. Giles: There is no evidence that the boy gave the message.—Mr. Turner: Then I shall ask for an adjournment of the case and summon the defendant.—Mr. Giles: I object to that.—Mr. Churton (magistrates' clerk) thought the notification should be *personal*. The magistrates then dismissed the first summons, and Mr. Giles asked for costs.—Mr. B. C. Roberts thought it was a technical offence.—The Chairman said they could not make an order for costs.—The second summons was then gone into. Mr. Turner observed that the practice of selling margarine as butter was becoming a glaring one.—Inspector Hallard and Bracegirdle repeated their evidence, and for the defence Francis Gardner, one of defendant's assistants, stated that he wrapped up the margarine to go to the inspector's house. The parchment around the margarine generally had the word "margarine" printed on it, but witness could not swear if it was so in that instance.—The Bench, after a careful consideration of the case, inflicted a penalty of 40s. and costs 18s. 6d. The Chairman said the penalty on a second offence would be very large, and the reason why the magistrates were so lenient was because there were no aggravated circumstances in the case. It was Mr. Evans' first offence.—The Bench informed Mr. Turner that he could state a case on the first summons if he wished.

CLERKENWELL AND DISINFECTANTS.

THE Vestry of Clerkenwell at their last meeting considered six teners for disinfectants for the ensuing twelve months. The terms of contract were that the disinfectants be supplied in such quantities and at such times and such places as may be required by the surveyor, and that the cost of analysis of any of such disinfectants, should they not prove to be in accordance with the tender, should be defrayed. Messrs. C. Kingsford, of the Lea Chemical Works, Whitepost-lane, Hackney, offered to supply clear carbolic acid fluid (95 per cent.), free from tar oils and sulphuretted hydrogen, at 2s. per gallon, and carbolic disinfecting powder (15 per cent.) free from tar oils and sulphuretted hydrogen, at 5s. per cwt. Messrs. Adams, Webster, & Co. tendered as follows:—95 per cent. clear carbolic acid fluid, free from tar oils and sulphuretted hydrogen, at 1s. 6d. per gallon; 70 per cent. carbolic acid, dissolved in caustic soda and free from tar oils and sulphuretted hydrogen, at 1s. per gallon; and 15 per cent. carbolic disinfecting powder, free from tar oils, etc., 4s. 6d. per cwt. Messrs. McDermott offered the three items as last mentioned respectively at 2s. 9d., 2s. 6d., and 8s.; and Messrs. Adcock, Easton, & Co. at 1s. 5d., 1s., and 4s. Messrs. Newton, Chambers, & Co. offered "free carbolic izal"—(A Voice: Not in the list, and not to be considered.)—Mr. Walton: It is the same thing under another name and a rose by any other name smells just as sweet.—Mr. Griffiths: What is the price?—The Clerk: 10s. 6d. per gallon. Their prices for the three items mentioned were 2s. 6d., 2s., and 6s., and the Whalley sanitary fluid and powder respectively at 2s. 6d. and 6s. 6d.—Mr. Johnson: Adcock, Easton, & Co. have served us before, and served us well, and I move that their tender be accepted.—Mr. Putterill seconded, and it was adopted.

THE UNIVERSAL PROVIDER AND SWINE FEVER.

At the Sunbury Petty Sessions on April 9th, Mr. William Whiteley, of Westbourne-grove, and Butts Farm, Hanworth, was summoned at the instance of the Middlesex County Council for having a number of pigs in his possession at Butts Farm infected with swine fever, and neglecting to give the necessary notices under the Contagious Diseases (Animals) Acts, 1878 and 1893. Dr. Herbert Smith prosecuted on behalf of the Middlesex County Council; and Mr. Roach defended. Dr. Herbert Smith said this was a very serious case. On March 15th the inspector (Mr. Slocock) received an anonymous letter stating that there was a bad outbreak of swine fever on the defendant's premises. He at once visited the farm, and asked to be shown the pigs. He went to the slaughter-house and there found 22 pigs, 18 of which were dressed and hung up ready for food. Some of these were splendid carcases, and some of the others were undoubtedly suffering from swine fever. There were four put on one side, which were all affected. In the pound adjoining the slaughter-house there were 19 more pigs, which looked very unwell. Notices were at once sent to the Board of Agriculture, the local authority, the police, and the defendant. The pigs which were diseased were condemned. Between March 14th and 15th eight pigs died, on the next day seven more died, the day after nine more died, and on the 17th he ordered 35 to be buried, as they were affected with the disease. Mr. Roach, for the defence, contended that though the pigs had been unwell, swine fever was not suspected till the 14th, and the inspector called before notice could be given. He called in support of this statement John Clarke, bailiff to the defendant, who admitted, in reply to Dr. Smith, that several pigs were buried before the 14th, but not because they were suffering from swine fever. There were about 300 pigs in the herd on the premises. The Board of Agriculture ordered 38 more pigs to be buried, and eventually the whole herd had been slaughtered. The magistrates considered that though Mr. Whiteley was not personally to blame, his manager was. They imposed the maximum penalty of £20.

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PROFESSION AND THE ANALYSES

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POINTS OF SUPERIORITY OF

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It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.



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CHEMISTS, PROVE THAT

WYETH'S BEEF JUICE

Contains the hæmoglobin of meat unaltered; that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession.

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Wyeth's Beef Juice should always be taken in cold, never in boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

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Addressed to the RESIDENT REPRESENTATIVE, William F. Horton.

CHAMPION AND CO., LIMITED, v. THE BIRMINGHAM VINEGAR BREWERY CO., LIMITED.

We expressed our opinion of this firm's conduct towards Messrs. Champion and Co. on December 23rd last, in consequence of which we were threatened with divers pains and penalties. It is some satisfaction to us to find that Mr. Justice Hawkins and a jury have put the stamp of their approval on the protest, which in trade interests we then felt it necessary to make, and that the Birmingham Vinegar Brewery Co., Limited, have learnt a lesson. The case, as reported in *The Times* of April 7th, is as follows:—

The plaintiffs in this action carry on an old-established business as vinegar makers in the City of London. They complained that the defendant company had damaged their trade by publishing a libel concerning them under the following circumstances: In August, 1893, a grocer, named Tibbs, was summoned at the petty sessions at South Shields for selling vinegar adulterated with a highly deleterious compound—viz., pyroligneous acid. Evidence was given that the vinegar was purchased of a dealer at Newcastle named Leach, who in turn received it from the plaintiff company. It appeared from Leach's evidence that the case had been adjourned for a fortnight in order that Messrs. Champion might make an analysis. A telegram had been received from them saying, "Monstrous that Tibbs should have been summoned. Sample examined to-day is perfectly pure and excellent vinegar. No pyroligneous acid. Your analyst is grossly mistaken in judgment." In their letter the plaintiffs repeated that the analyst had made a mistake, that although they had a very large output—as much as a cask a minute, and 10,000 bottles daily—their vinegar had always borne the highest character, and they added a P.S.—"As sellers in bulk we are advised we cannot reasonably be expected to undertake to defend a case of this kind." The Bench observed that it was evident Messrs. Champion had no desire to defend the charge, and it was most unfair that the disgrace should be visited upon retail dealers, when it really belonged to manufacturing firms. A fine of 5s. and costs was imposed. A report of the case appeared in certain trade papers called the *Grocer*, the *Grocers' Journal*, and the *Grocers' Chronicle*. The complaint of the plaintiffs was that the defendants had had these reports reprinted, and had circulated them among the customers of the plaintiffs, in order to create the belief that the plaintiffs' vinegar was adulterated with pyroligneous acid. The plaintiffs also contended that a letter written by the defendant to a trade paper commenting upon the case was a libel, and that the defendants had maliciously reprinted and circulated it in the vinegar trade. The defence was that the words complained of were a fair and accurate report of judicial proceedings, that the defendants' letter was a fair comment on a matter of interest in the trade, that they acted without malice, and that there was no libel.—Sir E. Clarke, Q.C., and Mr. Lewis Coward were for the plaintiffs; and Mr. Lockwood, Q.C., Mr. Blake Odgers, Q.C., and Mr. Robert Younger for the defendants.—Sir E. Clarke having opened the plaintiffs' case, Mr. Bigwood, M.P., was examined, and said he was the managing director of the plaintiff company. Their vinegar was absolutely pure. It was sold by about 20,000 customers of the company. Their annual output was upwards of 1,000,000 gallons. The defendant company were competitors in the trade. He sent the telegram and letter alluded to before the magistrates. [The learned Judge: So far as I can see, the magistrates' observation on the case was quite uncalled for.] The sample sent to the plaintiffs was examined by their analyst and pronounced pure. There was delay through waiting for another analysis.—Cross-examined by Mr. Lockwood: The representative of a trade paper called on him, and he gave his views on the matter. They were published. He did not consider this was an interview. He knew the process, as he had experienced it. It was not at his instance that the reporter called. The report was in the *Grocers' Journal*. [Mr. Justice Hawkins: I have not got the newspaper.—Mr. Lockwood: Probably your Lordship does not take it in. (Laughter.)] Witness: The trial was adjourned for a fortnight that the company might have an opportunity of furnishing an analysis. When it came on again they took no part in the proceedings. They were inexperienced in such a matter and did not know what to do.—Evidence was then given as to the printed slips circulated by the defendant company among the plaintiff company's customers.—Mr. Butterfield, the secretary of the plaintiff company, said that since the circulation of these leaflets the company's trade fell off by £6,000 in the year, of which 25 per cent. would be profit.—Cross-examined by Mr. Lockwood: The export trade was included in their computation, although it would not be affected by the action of the defendants. They manufactured acetic acid. That was concentrated vinegar.—Q.: What would be the effect of it on a salad? (Laughter.)—The learned Judge: Or on the consumer? (Laughter.)—Re-examined: Pyroligneous acid was different from acetic. They never had such a thing on the premises.—Mr. Lockwood, Q.C., intimated that the defendants would not call witnesses.—The learned counsel on each side having addressed the jury.—The learned Judge summed up. The jury had to consider whether what the defendants had done was merely in fair and honest advancement of their own trade, or whether they had published something which was untrue, or contained untrue implications and was in derogation of the credit and honesty of a rival trader. It was admitted by the defendants that there was no foundation for any imputation that the plaintiffs' vinegar contained pyroligneous acid. As regarded the proceedings at the petty sessions, it was admitted that the reports published were substantially correct, and if there were nothing further than the publication of any accurate report of judicial proceedings no ground would be given for an action. He (the learned Judge) thought that it was most unfortunate that at those proceedings the Bench had made an observation derogatory to Messrs. Champion, which had really given rise to this litigation. Under the circumstances Messrs. Champion, their analyst having reported that the vinegar was pure, were not called upon to take part in the proceedings. It was regrettable that there was not a further adjournment of the case, the opinions of the two analysts being directly contradictory. The gravamen of the action lay in the defendants circulating among the plaintiffs' customers the printed slips, and in the comments contained in their letter to a trade paper, in which they spoke of the plaintiffs "trying to bounce the Court." As to actual damage suffered by the plaintiffs the evidence was not very definite or satisfactory. It not being contended that the plaintiffs' goods were in fact adulterated, they would leave the Court without a stain on their character as honest traders.—The jury yesterday gave a verdict for the plaintiffs, damages £25, and judgment was given accordingly.

ENFORCING THE ACTS AT LEEDS.

At the Leeds Police court on April 10th, John Carter, farmer, Seacroft, near Leeds, was summoned under the Food and Drugs Act for selling milk which had been certified by the public analyst to contain 9 per cent. of added water. On March 15th a cart belonging to defendant's son delivered milk at the shop of the Leeds Cow Keepers' Dairy Company, in New York-street. Mr. Walker, the inspector of the Corporation, was close at hand at the time, and purchased a pint, which was submitted to the borough analyst, with the result stated. The defence was that defendant had been feeding his cattle on grains, and that the quality of the milk had varied accordingly. He had been fined £5 for a similar offence 12 years ago, and Mr. Bruce now inflicted a similar penalty, including costs.

Two charges in connection with the sale of margarine were investigated before Mr. Bruce at the Leeds Town Hall. In the first one the defendant was Alice Ellis, grocer, 68, Ascot Terrace, Pontefract-lane, Leeds, and the charge was one of exposing margarine for sale, there not being upon it a label with letters 1½ inches long, as required by the Act. It was admitted by the defendant's son, who appeared, that the margarine was not labelled, but it was pointed out that other material of the same kind was labelled. When Inspector Walker asked for a pound of it, he was told it was not butter, and it was supplied in a wrapper on which was properly printed the word "Margarine." Mr. Bruce inflicted a fine of 40s., including costs.

John Spacie Goodworth, grocer, 28, Dial-street, Ellerbury-lane, pleaded guilty to two charges, one of exposing margarine for sale which was not labelled, and one of selling margarine without a proper label. Inspector Walker went into the shop and asked for a pound of roller butter which was on the counter. Defendant said it was not butter, it was margarine. It was not labelled, and he could not find a proper printed label. Mr. Walker then asked for a pound of margarine, and it was supplied in a paper on which was written the word "Margarine" in pen and ink. Mr. Bruce fined him 40s., including costs for the first offence, and dismissed the second charge. The Deputy Town Clerk (Mr. Jolliffe) prosecuted in each case.

HEAVY FINES ON MILK CONTRACTORS.

At Brentford Police-court on March 31st, Messrs. Martin and Sons, of Brookley, milk contractors to the London County Council, appeared on four summonses for having caused to be delivered at Hanwell Lunatic Asylum, which is under the control of the London County Council, milk in two churns which on analysis was found to be adulterated and to have had the natural fat abstracted. The summonses were heard separately.—Mr. A. L. Houlder appeared for the Southall Local Board, who prosecuted; and Mr. Kicketts defended. On March 2nd the inspector to the Local Board went to the asylum, and took samples from the churns there being delivered by the defendants' carters. In analysis it was shown that there was adulteration to the extent of 7 per cent. with added water and that the natural fat had been abstracted to the extent of 20 per cent.—Mr. Kicketts submitted that the milk never passed through the defendants' hands, but came direct by rail from the farm at Derby to the asylum. In extenuation he urged this, and that the defendants had lost as much as £20 a week on the contract, having to sell milk at 9d. a gallon, whilst they had to buy it at 1s. a gallon. With regard to the other three summonses he contended that they all related to the same offence, being one delivery, and should have been incorporated in the first.—On the first summons the Bench imposed a fine of £10 and costs, but reserved judgment as to the question of the multiplicity of summonses.

SUPPRESSING ADULTERATION IN BIRMINGHAM.

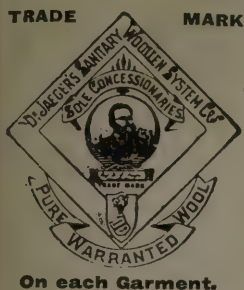
At Birmingham on April 6th, William Lovins was charged under the Food and Drugs Act with selling margarine for butter at a district shop in Kyrwick's-lane. Defendant did not appear, but sent an assistant named Robert Collins, who said he was responsible for the conduct of the business on the occasion in question.—Thos. Davies, the inspector, said he took two samples of what purported to be butter, and one was found to contain 85 per cent. of foreign fat, and the other 80 per cent. The assistant now said he must have mistaken the margarine for genuine butter, as it was impossible to distinguish them in the cellar. Mr. Ryland said that on the face of it this was a gross case of fraud on the public, and a fine of £5, and costs, would be imposed in each case.—Jno. Bill, 69, Aston-street, was summoned for a similar offence. In this case 90 per cent. of foreign matter was found on analysis. Defendant said he was terribly worried with business, and neglected to mark the margarine. He was fined £5 and costs.—William Holmes, 133, Highgate-road, was fined £3 and costs for selling milk containing 6 per cent. of added water, and 12 per cent. less fat than natural.—Angelina Newell, 154, Highgate-road, was fined £3 and costs, for selling milk containing 7 per cent. added water and 16 per cent. less fat than natural.—John Lee, 178, Highgate-road, was fined £3 and costs, for selling milk containing 24 per cent. less fat than natural and 5 per cent. added water.—Joseph Walker, 135, Great Charles-street, was convicted of a similar offence, it being proved in this case that the milk supplied contained 25 per cent. of added water. He was fined £1 and costs.—The offence in every case was that the milk was retailed as it was received from the wholesale dealer, but the magistrates pointed out that milk-sellers could, if they chose, protect themselves by getting a warranty with the milk they purchased.

IMPORTANT APPEAL AGAINST A CONVICTION FOR UNSOUND FRUIT.

At the County of London Sessions on April 7th, before Sir P. H. Edlin, Q.C., Chairman, sitting at Clerkenwell, William Nicholas White appealed against a conviction for having sold a quantity of unsound oranges intended for the food of man. Mr. Channell, Q.C., and Mr. Browner were for the appellant; Mr. F. Low and Mr. Wootton appeared for the Strand Board of Works, in support of the magistrate's decision. This was a case of great importance to dealers in fruit and vegetables. According to the evidence of the respondent on December 20th, a costermonger named Rowe bought two boxes of oranges at a public auction held at the appellant's place of business in Covent-garden Market, the appellant being a wholesale fruit and vegetable broker. He afterwards found that the contents of one box were entirely bad and unfit for the food of man. They were taken by Mr. T. F. Strutt, chief inspector of the Strand Board of Works, before a police magistrate, Mr. Lushington, who condemned them, and by his order they were destroyed. The appellant was afterwards summoned before him for having sold them, and was fined £10 and costs. Mr. White was called as a witness on his own behalf, and said that he had not seen the box of oranges when he sold them, but the purchaser might have inspected them if he had liked before buying them. There were nearly always some bad oranges in every box, and it was the custom of the trade to examine the boxes and to classify them according to an estimate of the number of bad oranges they were likely to contain, the price charged varying with the class. It was expected that the purchaser would sort them and destroy the bad fruit, and it would be impossible to carry on the trade in any other way. There was a printed notice on the walls of his premises to the effect that the goods were sold upon those conditions. Other witnesses were called to the same effect, and a suggestion was made that Rowe had himself put bad oranges in the box in order to substantiate a claim against the appellant. Mr. Channell contended that it must be shown that Mr. White knew, or had reasonable ground for knowing, the oranges were bad before he could be convicted under the statute, and that the bad oranges were not intended by him for the food of man, because the purchaser was expected to destroy them and sell only those which were good. The learned Chairman said the justices dismissed the appeal, with costs, and rejected the suggestion made that Rowe had put bad fruit into the box. He refused to grant a case for the consideration of the High Court.

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Have been received from Medical Men.

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Food and Sanitation.

SATURDAY, APRIL 21ST, 1894.

WHISKEY, BEER, AND THE BUDGET.

If it were possible to still further degrade English beer, and to make it a viler concoction than—with the exceptions of the brews of a very few firms—it at present is, we make no doubt that the latest proposal of Sir William V. Harcourt will produce that undesirable result. With the exception of the *Mark Lane Express*, we have been alone amongst newspapers in pointing out the shameful swindling done by brewers upon the public—which has been deliberately fostered by the Inland Revenue department, who have not only debauched our national beverage, but have driven thousands of English labourers from the land to our cities and towns, making still more keen and truly terrible the lot of the unskilled workman. Thanks to these Inland Revenue Officials seven-eighths of our whiskey is the product of Indian corn, etc., and our beer is "chemical swipes." As though this folly were not in itself enough, we now have Sir William V. Harcourt putting an additional tax of 6d. per barrel on beer, confident, as he says, that it will not increase its price to the consumer. Had there been along with this increased duty a further step taken, and it were made compulsory that beer should be manufactured only from malt, hops, water, and yeast, a great step for the protection of the people's health and in reviving a national industry would have been made. The repeal of the malt tax, which allows the brewer to make beer out of any substitutes he chooses, has in ten years thrown out of work thousands of Englishmen. The quantity of sugar used in brewing was in 1872 only 260,610 cwt. In 1892 this had increased to 2,096,720 cwt., which displaces one million quarters of malt, whilst rice, maize, and other substitutes displace at least another million—i. e., our fields are untilled, our workmen idle, whilst woolly-headed niggers are busy sending us the substitutes that now are used in the production of the article palmed off upon the public as beer.

We cannot for the life of us understand the blindness of our Punch and Judy press, from *The Times* downwards, that delights in lauding folly like this as wondrous statesmanship. The actions that make thieves of a class at the expense of the public

health ruin a great industry, and throw thousands of English labourers out of work for the benefit of the rice, sugar, or maize grower—all articles, be it noted, not grown or produced by us—we believe indicate dangerous mental disease rather than fitness to rule a great nation. Whilst Parliament is gabbling and Labour commissioning, or Agriculture commissioning, the brewer and the distiller, laughing at our legislative moles, march gaily on their adulterating way and amass enormous fortunes. A few hours of Parliament's time, had our Government the inclination, would enable a measure to be passed making the use of substances other than malt and hops in brewing illegal, and prohibiting the Indian corn and trash now used in the manufacture of whiskey. The results would be the placing of hundreds of thousands of acres under barley crops, and putting into work thousands of unemployed labourers; more than this, there would be the beneficial effect upon the consumers, who now have an increasing difficulty in procuring pure, wholesome spirits or beer. We venture to say that the driving out of the market of the maddening rubbish now sold as whiskey would, from the point of view of public health, be worth a great deal.

But there is another side of this pure beer and spirits question to which it behoves us to direct attention. Every attentive observer must have noticed within the last few years how the public taste has been more and more turning towards light beers—how, for example, the consumption of imported lager beer has enormously increased. The cause of this is not far to seek. As long as the Englishman of taste could obtain an honest, healthy glass of beer, brewed from malt and hops, he was satisfied with it; but when the repeal of the malt tax turned the brewer into an adulterating rogue the man of taste quickly wearied of English beer, and hence we have a rapidly-growing consumption of lager beers made from malt, hops, and yeast only. The taste for these pure beers is daily growing, and their sales will continue to increase. It needs no great degree of foresight to be able to predict how disastrous this will eventually be to an important English industry, and Sir William Harcourt's proposal is a long step in the direction of that disaster. He suggests that the brewer will not suffer by this increased duty, because he can make his beer of still lower gravity; but he does not see that this further lightening of beer is a further plunder of the public, who pay the same price now for the weak chemical swipes that they paid a few years ago for the strong, honest product of malt, hops, and yeast. Nor does it concern this wondrous chancellor—whose carcass would outweigh an ox, though we question if his brain-work for England would turn a feather in any scale—that this lightening of beer means that even less barley will be used by brewers than is now the case. There is not one word in any of our newspapers of how this ignorant Inland Revenue blundering has swollen brewers and distillers into millionaires, whilst it has brought the labourers once employed in barley-growing to the workhouse or the jail. When the purchaser asks for beer he expects to receive the product of malt, hops, and yeast, and when he buys whiskey he expects a liquid distilled from fermented grain. At present he gets neither the one nor the other. In plain words he is swindled, and our Government encourages the roguery. Other governments are neither so foolish nor dishonest. In Bavaria, for example, it is compulsory that beer be made from malt and hops, and a smart punishment awaits anyone guilty of the frauds our Government encourages.

HOW TOBACCO IS DOCTORED.

1. **MOISTEN** 50 parts of Virginia leaf before cutting with the following mixture: Dissolve 2 parts of sugar in 24 parts of water and add $\frac{1}{10}$ part of cinnamon wine, $\frac{1}{10}$ part extract of mastic and 2 parts of juniper wine. The tobacco, after moistening, is pressed into a barrel, remaining there 24 hours, when it is cut and packed.

2. **Moisten** 100 parts of Virginia leaf with the following mixture, obtained by boiling for 3 hours: Raisins, 3 parts; bay-leaves $\frac{1}{2}$ part, and pulverised cascarilla $\frac{1}{4}$ part in water 80 parts. Let the decoction cool and strain the liquor through a linen cloth, and then add 4 parts of cinnamon wine and $1\frac{1}{2}$ parts of sugar. The tobacco, after moistening, is dried and cut.

3. **Pulverise** dried plums 20 parts, tamarinds 15 parts, cassia bark 5 parts, figs 10 parts and juniper berries 30 parts. Macerate in 225 parts of water for 24 hours and add to the resulting liquor: juice of Spanish liquorice 30 parts, molasses 20 parts, honey and saltpetre each 10 parts. A sufficient quantity to flavour 500 parts of ordinary American leaf tobacco.

4. The Techno-chemical receipt book gives this for flavouring Porto Rico leaf: Boil in a covered boiler for 3 hours best wine vinegar 12 parts, water 90 parts, honey 1 part, large raisins 3 parts, and bay leaves $\frac{1}{4}$ part. Filter the liquor and, when cooled to milkwarm, treat with it 100 parts of Porto Rico leaf.

5. **Swicent Tobacco, English Process:** Remove the lower thick stems from 100 parts of Virginia leaf, moisten with 60 parts of water, cut fine and kiln-dry. In the meanwhile boil the following ingredients in 10 parts of water: Sugar 3 parts, raisins 2 parts, and cascarilla bark $\frac{1}{4}$ part. Strain the liquor when about milk-warm through a linen cloth, and when it is entirely cold add 1 part extract of mastic and $\frac{1}{2}$ part of cinnamon wine. Moisten the tobacco with this mixture and then pack in paper or linen bags.

6. **Sweet-scented Tobacco.** For 100 pounds ordinary tobacco: Commineute 4lb. of dried prunes, 2lb. each of orange peel and rosewood, 1lb. of coriander seeds, and 2lb. of raisins; pour over them 8 $\frac{1}{2}$ oz. of purified potash and let the whole stand 24 hours; then heat it nearly to the boiling point, draw off the liquor and press out the residue; dissolve in the liquor 2lb. of purified saltpetre, 4lb. each of common salt and honey. Pour 40lb. of this mixture over 100lb. of the prepared tobacco.

7. Here are two processes for improving the flavour of inferior qualities of tobacco: For 100lb. commineute cassia bark, orris root, liquorice root, angelica root, and rosewood each 7 oz. Macerate with 4 gallons of water, press out the liquor and compound it with a solution of 2lb. of pure saltpetre and 3 $\frac{1}{2}$ lb of white sugar in $1\frac{1}{2}$ gallons of water.

8. **Fresh lemon peel and fresh orange peel** of each 8 $\frac{1}{2}$ oz., cubeb 3 $\frac{1}{2}$ oz., calamus root and coriander seed each 7 oz., and figs 1 $\frac{1}{2}$ lb.; macerate 24 hours in four gallons soft water, strain off the liquor and dissolve in it 2lb. of sugar syrup and 1 $\frac{1}{2}$ lb. of pure saltpetre.

SIR WILFRID LAWSON ON THE INLAND REVENUE OFFICIALS.

SIR WILFRID LAWSON tells a new story about a quack doctor. This practitioner, he says, had perfected a process for washing people's brains, taking them out from the skull and returning them "while you wait." One day a brain was being washed in the back shop, and when the doctor brought it back, cleaned, to refit, he found to his dismay that the customer had departed. A few days later he met him in the street. "Ah, my dear fellow," he said, "I am glad to have found you. Do you know you went away the other day without your brains?" "Oh, did I? Well, it's of no consequence; since I saw you I have got a Government appointment as an Inland Revenue analyst!"

MORPHINE IN SOOTHING SYRUP (*Ch. and Dr.*).—The agents of Winslow's Soothing Syrup inform the trade of England that the exact proportion of morphine contained in this preparation is one-eighth of a grain to the ounce, thus making the maximum dose one sixty-fourth of a grain.

PHENATED LIME.—This disinfectant (*chaux phenique*) used largely in Russia, is prepared by thoroughly slaking three parts of lime with five parts of water, and adding under constant stirring and in small portions two parts of gas tar. The yellowish-brown mass thus procured is mixed with water and used in liquid form.

ARTIFICIAL SUGAR.—Bradstreets' quotes from the *Revue Industrielle* to the effect that there is much excitement in the northern districts of France, where a great deal of beetroot sugar is manufactured, about a process for making sugar by the synthetical method with lighting gas. The description of the process does not excel in its clearness. In a box, which is hermetically closed, is a porous partition on which a layer of *mousse de platine* is deposited. A current of lighting gas is allowed to enter into the box; condensation takes place, and the result at the other end of the box is a sugar which, according to our contemporary, shows all the "organoleptic" qualities (whatever that may be) of commercial sugar. Sugar made by this process would cost only a few centimes per kilogramme. On the other hand, many eminent chemists hold that the problem of the synthetical production of sugar is far still from a solution, and that beetroot and sugar-cane will for a long time yet defy the attempts of replacing them by merely chemical methods.

ZINC POISON IN TREACLE.

THE following discoveries recently made in America go to show that treacle may be dangerously adulterated. We do not suppose that there is much, if any, analysed in this country, and it might be well if a few samples were taken for analysis.

In New Orleans, recently, some ginger snaps much liked by children were chemically examined, and the ash of the samples found to contain zinc oxide. As the snaps were sweetened with molasses, the chemist turned his attention in that direction, and samples obtained of the same that were used in the snaps. The analysis proved that there were eight grains of zinc to the pint of molasses. Other samples were obtained from different dealers, and six of the fifteen samples analysed contained zinc. Dealers frankly admitted that zinc was used in bleaching molasses, the materials consisting of bisulphate of sodium and metallic zinc. The zinc and sulphate solution are added directly to the barrel, shaken up, and placed on the market. The colour of the molasses is brightened and the material itself is raised several grades. Zinc is a violent poison, and its internal use causes cramps in calves of the legs, nausea, and diarrhoea. Measures ought to be taken to stop its use. There is no way of telling except by chemical analysis whether the molasses sold in that market is pure or adulterated; as the city has no chemist in its employ they are not likely to know.

The New Orleans Board of Health has just issued a circular calling attention to the adoption of a resolution prohibiting the adulteration of molasses, and suggesting that the officials of other cities co-operate in securing the passage of laws in the various States operating in this direction. If such laws already exist, the Board requests the stricter enforcement of the same.

Mr. D. O. Colcott, secretary of the New Orleans Sugar Exchange, has expressed himself as opposed to the action of the health authorities. He said that the manipulation of the staple carried on by the legitimate trade was not detrimental to the public health in the least. We have the authority of no less a person than Dr. Stubbs, of the Sugar Experiment Station, who says: "That the clearing of molasses performed scientifically is not in the least injurious to health."

"The substances used are sulphate of soda and zinc dust, which by oxidising remove the obnoxious colour and are precipitated at the same time. Should the precipitate be left in the bleached goods, it would simply contain a small amount of glauher salts, which in moderate quantities acts as a laxative, but the person who bleaches properly is careful to leave the precipitate behind and so does no harm, while he who tries to accomplish the same end by dumping a large quantity of the agent into the barrel and then stirring it with a stick ought to go to jail as a poisoner. The crystals are used for improving the brilliancy of yellow clarified sugar, and, used with proper restrictions, is recognised as a lawful agent. So with sulphate of soda and zinc dust for bleaching molasses." The trade of the city are much agitated over the question.

It is known that there is considerable black New York molasses in Boston, but, so far as we know, it comes from New York. So much is there, in fact, that it is said to be interfering with the sale of pure goods. Be that as it may, there is a scarcity at the present time of the best open-kettle New Orleans.

"SHILLING" BUTTER.

CALEB WHITE, butterman and dairyman, of Dartmouth Park-hill, St. Pancras, was summoned for unlawfully selling as "butter" an article containing 70 per cent. of foreign fat; and Joseph H. Shaw, also of Dartmouth Park-hill, was summoned for selling as "butter" an article adulterated with 50 per cent. of foreign fat.—Mr. Anderson, one of the sanitary inspectors, prosecuted, and the evidence in each case was identical. He sent a female assistant into each shop for three-quarters of a pound of shilling butter, which in each case was supplied without anything being said about margarine, though that was the article really sold.—The Bench imposed a fine of £5 and 6s. 6d. costs in each case, or in default a month's imprisonment.

OBITUARY.

WE regret to record the death of a famous pioneer in the war against adulteration—Dr. Arthur Hill Hassall. In the days when narrow-minded advocates of supposed social advancement like Mr. John Bright preached the gospel of the ten-threads-per-inch and china-clay-plastered-cotton in language like that below, which was Mr. Bright's answer to Lord E. Cecil's demand for legislation, Dr. Hassall's revelations anent adulteration did a great public work.

"It is quite impossible," said Mr. Bright, who was then president of the Board of Trade, "that you should have the oversight of the shops of the country by inspectors, and it is quite impossible that you should have persons going into shops to buy sugar, pickles, and cayenne pepper to get them analysed, and then to raise complaints against shopkeepers and bring them before magistrates. If men in their private business were to be tracked by Government officers and inspectors every hour in the day life would not be worth having, and I should recommend them to remove to another country where they would not be subject to such annoyance."

Dr. Arthur Hill Hassall's greatest claim upon the memory of his countrymen is, to our thinking, the fact that he showed the above shameful doctrine to be what it was—plain, unadulterated, advocacy of thievery—and that, despite Mr. John Bright and the *laissez faire* school, it was made possible that there should be oversight of shops by inspectors, and that thieves could be punished. There are those who say to the few who strive against Governmental humbugs of the Mundella type, and departmental fools like the Inland Revenue Commissioners, that it is useless to try to suppress the altered frauds of to-day. The same was said to Hassall, Postgate, and the few who were active in the movement forty to fifty years ago, and just as the result of their work was the present Food and Drugs Acts, so the outcome of the present agitation will be an amended Act and a State department for the scientific investigation of foods and research into adulterations. There is plenty of work to do in cutting down a departmental nincompoop here, and hamstringing a Governmental scientific ass there, and it must be done ere the public awakes to the great importance of the pure food question. There is the more credit due to Hassall that when he saw his work he did not count the cost, or the enemies he would make by doing it, but hit out straight from the shoulder, and it may be said that the measure of his success was proportionate to that of his hard hitting—a moral that might well be pondered over by not a few *fainéant* food purists of to-day.

POPLAR BOARD OF WORKS—INCREASE IN THE ADULTERATION.—Mr. W. C. Young, the Board's analyst, sent his quarterly report, which stated 72 samples had been submitted to him. Of 36 milks 10 were adulterated with water to the extent of 5, 5, 7, 7, 11, 19, 19, 20, 23, and 29 per cent. respectively. Of 12 butters 7 were adulterated with foreign fat to the extent of 47, 48, 52, 57, 60, 85, and 87 per cent. respectively. The 12 breads and 12 flours were unadulterated. During the year 288 samples were analysed; of these 59 or 20·5 per cent. were found to be adulterated. This result shows an increase in adulteration as compared with last year, and is the highest recorded for many years.

ALLEGED ADULTERATION OF LARD.—At the Swansea Police-court on April 9th, Mary Davies, grocer, of Caebriicks, was summoned for selling lard which, on analysis, was found to contain 15 per cent. of added beef fat.—Mr. Owen Leeder, who defended, produced an invoice from a Belfast firm, who described it as "pure lard." He called evidence to show that the lard in question was that described in the invoice, and that it was only possible to tamper with lard in the manufacture.—The Bench decided to accept the invoice as a warranty in law, and they dismissed the case.

HORLICK'S
MALTED
For Infants
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CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

AN INQUIRY INTO THE RELATIVE MERITS OF BUTTER *v.* BUTTER SUBSTITUTES.

V.

(Continued from page 115.)

IN the experiments of artificial digestion, a known quantity of the oleo-margarine or butter was taken, and kept between 100 degs. and 104 degs. F. (38 degs. and 40 degs. C.), and not allowed to vary beyond this limit. In all cases the same amount was used, so that the results of all might have a uniform basis, and difference in the results should be due only to change in conditions. In these experiments two tests were used for determining the emulsion, and two observations of its thoroughness were made on many samples. The tests were macroscopic and microscopic. When a fat or oil is completely emulsified, a change occurs in its gross appearance, which is nearly as definite as that which is determined only by the microscope, which was used to confirm this change in nearly every instance. An emulsion is simply a state of fine subdivision, the fat being broken up into minute definite globules, the size varying considerably with the kind of fat and the completeness of the emulsion. When the emulsion is complete, not only can it be seen that the mass is composed of minute globules, but it has become much thicker and lighter in appearance. A butter, for instance, which at 140 degs. F. (40 degs. C.) is fluid and is easily poured, becomes nearly semi-solid, and is poured only slowly. The microscope shows this subdivision, at this stage, as quite complete. When this state had been produced, the emulsion will remain permanent, the two portions, the oil and the emulsifying agent, not separating on standing and cooling. With an insufficient quantity of emulsifying agent, although a fine subdivision may be readily obtained, the separation quickly takes place, the globules not remaining distinct, or a part remains in emulsion, the separated portion collecting as a clear oil on the surface. This permanency is perhaps the most valuable ready test of the thoroughness of an emulsion. But, as these experiments have shown, the emulsion may be permanent before the subdivision is as minute, as may be produced by continuing for a longer time the same conditions, or by an additional quantity of emulsifying agent. Therefore, these two observations of the permanency and completeness were made, and both conditions tested by gross and microscopic change.

In the following tables, I., II., III., and IV., the usual quantity of oleo-margarine or butter was taken, and to this was added a solution of extract pancreatis every fifteen minutes, until the desired emulsion was obtained, the object being to determine the amount necessary to bring about this change. The total amount necessary with the same samples is seen to vary somewhat in the different groups, due to varying conditions in the experiment, as, for instance, the amount of agitation, which was purposely not the same with each series; also, the amount of solution added at first, which seems to influence the total amount necessary. In each of these groups a butter was used, that the results of the other samples could be compared, in which way only it is intended the results should be considered.

TABLE I.

Solution used: Extractum Pancreatis, 1 per cent. Showing amount necessary for complete emulsion; observations of permanent emulsion not taken. Tests were made by gross appearance, and a uniform sub-division shown by examination and hand lens. Solution added in amounts of 0.5 c.c.

SAMPLE.	Amount used.	Amount of emulsifying agent used.
A (oleo-margarine)	10 c.c.	2.00 c.c.
9205 (oleo-margarine)	10 c.c.	2.00 c.c.
9209 (oleo-margarine)	10 c.c.	2.00 c.c.
L (oleo-margarine)	10 c.c.	3.00 c.c.]
E (butter)	10 c.c.	1.50 c.c.

TABLE II.

Solution used: Extractum Pancreatis, 1 per cent. Showing necessary amount to form a permanent emulsion; process not carried to complete emulsion.

SAMPLE.	Amount used.	Amount of emulsifying agent used.
A (oleo-margarine)	10 c.c.	1.50 c.c.
H (oleo-margarine)	10 c.c.	1.75 c.c.
B (oleo-margarine)	10 c.c.	1.30 c.c.
9207 (oleo-margarine)	10 c.c.	1.50 c.c.
9205 (oleo-margarine)	10 c.c.	1.75 c.c.
E (butter)	10 c.c.	1.25 c.c.

TABLE III.

Solution used: Extractum Pancreatis, 1 per cent. Showing amount necessary to form complete emulsion, as determined by gross appearance, and also microscopic examination.

SAMPLE.	Amount used.	Amount of emulsifying agent used.	Emulsion not equaling the others, either in fineness or uniformity.
A (oleo-margarine)	10 c.c.	2.50 c.c.	
L (oleo-margarine)	10 c.c.	2.75 c.c.	
O (cheap butter)	10 c.c.	2.75 c.c.	
P (good butter)	10 c.c.	1.50 c.c.	
R (good butter)	10 c.c.	1.50 c.c.	

TABLE IV.

Solution used: Extractum Pancreatis, one-half per cent.; added at long intervals.

SAMPLE.	Amount used.	Amount of emulsifying agent used.
U (oleo-margarine)	10 c.c.	3.45 c.c.
T (oleo-margarine)	10 c.c.	3.15 c.c.
S (oleo-margarine)	10 c.c.	2.95 c.c.
H (oleo-margarine)	10 c.c.	3.20 c.c.
W (oleo-margarine)	10 c.c.	2.95 c.c.
L (oleo-margarine)	10 c.c.	3.45 c.c.
X (oleo-margarine)	10 c.c.	3.20 c.c.
9205 (oleo-margarine)	10 c.c.	3.20 c.c.
O (cheap butter)	10 c.c.	3.70 c.c.
E (good butter)	10 c.c.	2.45 c.c.
P (good butter)	10 c.c.	2.45 c.c.
R (good butter)	10 c.c.	2.45 c.c.

As stated above, the tables show some differences, as the conditions were not the same in all; but the object was in all cases to so present the results that, with the same conditions, butter and oleo-margarine might be compared. A good quality of butter, in all cases, forms a permanent emulsion more readily and easily than oleo-margarine, and this emulsion which is formed is at first a little finer and more uniform. There is scarcely any difference in the manner in which the substance is broken up immediately after adding the emulsifying agent; but the oleo-margarine separates more quickly, and the formation of the permanent emulsion takes a little more time and agent. In one other particular there is a difference at this stage. With both, before the emulsion is permanent, when allowed to stand, the fat separates and arranges itself in layers, the under consisting of the part which stays in emulsion, the upper, that which separates. In case of butter, the separated portion resembles, in appearance, the melted butter before the emulsifying agent was added; while, with oleo-margarine, this differs from the melted oleo-margarine, being lighter and thinner, suggesting that it is some one of the ingredients of the oleo-margarine which resists more strongly than the others. Also, after the permanent emulsion is formed, there is more resistance by the oleo-margarine to the finer subdivision, requiring more time and agent than the butter, which seems to pass into this state more readily and steadily. This is shown in Table III., in which, especially, the process was carried until the subdivision was much more minute than in the others.

Tables V. and VI. give the results of experiments for the determination of the relative time required for the formation of an emulsion, when an excess of the agent had been used. In Table VII. the object was the determination of the amount of emulsifying agent necessary to form at once a permanent emulsion. In this series, solutions of different strength were used, in order that the same amount of fluid should be added in every case. It was agitated until a good emulsion had been formed.

IRVEN BROTHERS,

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Entrances—Sir Thomas's Buildings & Cumberland Street,

WARRANTED PURE

"LI-VER" Brand of Lard.

TABLE V.

Solution used: Extractum Pancreatis, 1 per cent. 3 c.c. added at beginning of experiment, showing time required to emulsify the following samples which were used:

SAMPLE.	Time required for the formation of a permanent emulsion.	Time required for the formation of a complete emulsion.
P (good butter)	15 min.	45 min.
R (good butter)	15 "	45 "
E (good butter)	15 "	60 "
O (cheap butter)	35 "	—
T (oleo-margarine)	40 "	80 min.
S (oleo-margarine)	80 "	100 "
U (oleo-margarine)	90 "	120 "
W (oleo-margarine)	100 "	120 "

{ A satisfactory complete emulsion not formed.

TABLE VI.

4.5 c.c. of the 1 per cent. solution used, and added at once at beginning of experiment. First observation taken fifteen minutes after solution was added.

SAMPLE.	Time required for the formation of a permanent emulsion.	Time required for the formation of a complete emulsion.
P (good butter)	51 min.	15 min.
T (oleo-margarine)	15 "	20 "
Q (oleo-margarine oil)	90 "	—
C (cotton-seed oil)	90 "	—
D (lard)	25 "	90 min.
Y (lard)	15 "	60 "
Z (sesame oil)	60 "	120 "

At the end of two hours, Q, C, and Z had not formed emulsions which could be fairly compared with the others, although they were uniformly broken up.

TABLE VII.

Solution of various strengths of Extractum Pancreatis used: $\frac{1}{2}$, $\frac{1}{4}$, 1, 2, 4, 8, and 12 per cent. 4 c.c. was added to the same amount as used in all previous experiments, and kept in the bath at the temperature of 40 degs. C for fifteen minutes, and then allowed to cool slowly, showing amount (by strength of solution) necessary to form permanent emulsion.

A (oleo-margarine)	$\frac{1}{2}$ per cent.
S (oleo-margarine)	1 "
Z (sesame oil)	8 "
M (oleo-margarine oil)	12 "
C (cotton-seed oil)	12 "
G (lard)	1 "
Butter	$\frac{1}{4}$ "

(To be continued.)

MILK AND DISEASE.

THE importance of a pure milk supply has again been shown by Dr. A. K. Chambers, Glasgow, who records an outbreak of scarlet fever in December, 1893, in the north-western district of Glasgow, connected with infected milk supplied from two dairy farms. Of 80 families supplied from these sources, 11 or (13.7 per cent.) contracted scarlet fever, yielding 18 cases. On visiting the two farms, several cases of sore throat were discovered. The more suspicious of these were isolated and watched. They showed scarlatinal appearances in the throat, but no desquamation occurred. The scarlatinal character of these sore throats was confirmed by the later occurrence of an undoubted case of scarlet fever in the person of a byreman at one farm. The outbreak ceased when the milk supply was cut off. There was no suspicious affection of the cows on the two farms. The contamination of the milk was evidently in small quantities, such as might happen were the individual milk-carrier the source of infection.

As pointed out by Dr. Chambers, two aspects of the outbreak are of great importance:—

"One is the responsibility of the milks purveyor for the health of his employees. This has been frequently pointed out in the past, but the farmer has not yet accepted the teaching. It is a matter of common acceptance that infectious disease has often gained access to the source of a milk supply under the simple guise of a 'common cold'; the rude awakening which follows may mean

commercial disaster to the farmer. The relationship of infectious disease to a milk supply is of an extremely delicate character. and the plain duty of the farmer is to allow no one with symptoms of illness, however apparently trivial, to have anything to do with his milk trade while the symptoms continue, or until they are clearly not of such a character as, to a trained observer, would suggest the possibility of infection.

"The second aspect of this outbreak is primarily of a medical character. It is a feature of all outbreaks of infectious disease that along the stream of well-defined and easily recognisable cases there extends a margin of less defined cases, diminishing in intensity and definition, until it is only by association that many are recognisably related to the main current. Cholera has its fringe in cases of diarrhoea of diminishing intensity, until finally it is lost in apparently simple diarrhoeas. So also has enteric fever; and we have, in this city, just passed through a similar experience in regard to the eruption of small-pox. The margin of a scarlet-fever epidemic consists of cases of associated sore throat, and reference has already been made to the unusually large proportion of these which occurred in the consumers of the milk under discussion.

"How are these vanishing points of infection related to the cases which are easily recognisable? They are due to the same cause, and for at least the time of their duration must be held to be capable of a certain power of infection, but they do not come within even a liberal reading of any clinical description of cholera, or enteric fever, or scarlet fever, and consequently escape notification. In some instances in connection with the disease last named later symptoms may indicate their true character, but such are always open to the suspicion that this might have been recognised by continuous observation at the beginning."

Along with sanitary dangers such as the above, milk consumers have another danger to face. Milk adulteration by water is always a risky thing for the consumer, on account of the often faulty character of the water supply in country districts. It is only by dealing with firms of unblemished reputation, such, for instance, as the Aylesbury Dairy Company, that the public can really be secured against disease or swindling in the milk supplied. The magnitude of the Aylesbury Dairy Company's business enables it to have regular inspection by expert medical officers of all farms from which it draws its milk supply. The rigorous daily analytical tests to which the milks are subjected on arrival preclude the possibility of any adulteration by impure water that may disseminate disease. From a public health point of view it is unfortunate that there should be in the whole of London only one firm whose milk can be thus relied upon as absolutely healthy and untampered with. Any one of an inquiring turn of mind can find many curious features about London milks that public analysts must pass as genuine on account of the Somerset House standard. Samples of average milks purchased from London dairy companies invariably show something like 0.50 per cent. less cream than do samples purchased from the Aylesbury Dairy Company, which leads to a strong suspicion that if skimming does not take place, separated milk is mixed in large proportions with all the London milks we have examined with the exception of those of the Aylesbury Dairy Company.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

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BRADFORD BOROUGH ANALYST'S REPORT.

THE report of the borough analyst (Mr. F. M. Rimmington) for the quarter ended March 31st last showed that of the samples examined during that period thirty were found to be genuine and one was adulterated.

THE EXCESS WATER AND WHISKEY SWINDLE.

A TRADER was fined 42s. at Clerkenwell on April 13th. for having sold spirits which were diluted to the extent of 15 per cent. more than allowed by law.—The defendant had put up a notice that spirits sold on the establishment would be "of the same quality as heretofore, but in order to meet the requirements of the Food and Drugs Act no alcoholic strength could be guaranteed."—The magistrate held that this was a bad notice. It did not warn the buyer that the spirits were diluted. It was vague and nonsensical.

IS BUTTER A PERISHABLE ARTICLE?

MARY JANE GHENT, of Poole, was charged on April 12th with selling salt butter containing 60 per cent. of foreign fat. Mr. Budge, for the defence, contended that salt butter was a perishable article, and that a summons should have been taken out within twenty-eight days of the alleged offence. He said there were no cases stated on the point, and the magistrates must be guided by their own common-sense as to whether salt butter was a perishable article or not. The magistrates decided it was not, and fined defendant 40s. and costs.

DERBYSHIRE COUNTY COUNCIL APPOINT AN ANALYST.

THE Weights and Measures Committee reported that they had appointed Mr. Jno. White, F.I.C., public analyst for West Bromwich, to be analyst for the county of Derby at a salary of £350 per annum, together with necessary expenses; also that Mr. Ontram, the river inspector in the county, be appointed an inspector under the Foods and Drugs Act, to collect samples for analysis, etc. The committee were taking steps to provide a laboratory and offices for the new county analyst.

THE MARGARINE ACT.

AT Caerleon Police-court on April 12th, John Bevan, grocer, St. Dial's-road, Cwmbran, was summoned for selling margarine for butter on March 10th. Mr. Waddington prosecuted, and Mr. W. Lyndon Moore defended.—Mr. Lewis visited defendant's shop on the day mentioned and asked for half a pound of butter. Defendant's niece served him. The sample sent to the analyst was found to contain 10 parts of genuine butter and 90 parts of fat other than butter.—Mr. Moore raised a technical objection, and pleaded ignorance on behalf of the defendant.—Defendant was fined £1, including costs.

ENFORCING THE ACTS AT WORKSOP.

AT Worksop on April 11th, A. J. Walker and Charles Walker, brothers, in partnership as bakers, at Worksop, were fined 20s. and costs for selling 2lb. loaf which was 2oz. 10dm. short weight.—Charles Sinderson, of Worksop, was fined 20s. and costs, or 14 days, for selling a 2lb. loaf, without weighing it, which was 1oz. 4dms. short weight.—Arthur Henry Hewitt, grocer, of Worksop, was fined 5s. and costs for selling milk which, according to the public analyst, had been deprived of 10 per cent. of the fat natural to it, and been adulterated with water to the extent of 5 per cent.—George Taylor, for a like offence, was fined £5 and costs. The analysis showed that the milk contained 17 parts of new milk and 22 parts of skimmed milk, and this was considered a very bad case.

ADULTERATED MILK AT GRAVESEND.

ALBERT PRENTIS, 13a, Berklev-road, was summoned at Gravesend Police-court, for selling adulterated milk.—Mr. A. H. Lukes, sanitary inspector, proved purchasing a pint of milk, a third portion of which had been sent to the borough analyst, who certified that it contained 25 per cent. of added water.—Defendant said he could not understand how the water got in the milk, and called his wife, who also pleaded ignorance. She said she served Mr. Lukes with the milk, the can in which she kept it being almost empty at the time. The milk was brought to her at seven in the morning, and Mr. Lukes purchased at half-past two in the afternoon.—The Bench said they considered the milk had become poor because it had been served from the top, and under the circumstances would only order defendant to pay the analyst's fee.

A QUEER DECISION.

WALTER PINFIELD WELLS, milkseller, Hurt End, was charged at Alcester Petty Sessions with selling milk not of the nature demanded, on February 13th. He pleaded not guilty, remarking that he bought the milk as new and sold it as such.—Frederick Bennett, inspector under the Food and Drugs Act, stated that defendant supplied him with half a pint of milk, which he divided into three parts, marking them "No. 75." Witness gave the defendant one part, sent another to the public analyst, and kept the third, which he now produced. Subsequently he received a certificate from Dr. Bostock Hill to the effect that the sample of milk submitted was 35 per cent. deficient of its natural fat.—By the Chairman: Putting water in the milk would not produce a deficiency of fat. Defendant explained that the milk was poor in consequence of the food which had been given to the cows.—By the Chairman: He did not keep cows himself.—Mary Wells, wife of the defendant, said her husband sold the milk as he bought it. He never interfered with it in any way.—Some discussion took place as to whether, in taking the analysis, any allowance was made with regard to the time of year. The milk would be richer at certain periods. Mr. Gregg pointed out that that question had not yet been settled; it had to receive the further consideration of the House. The inspector argued that under the existing Act there should be a conviction in the present instance.—Eventually the Bench decided that the certificate was not sufficient to obtain a conviction, and the case was dismissed.

MULLINGAR BOARD OF GUARDIANS AND THE FOOD AND DRUGS ACT.

THE following resolution of the Town Commissioners was read:—"That the sanitary authority now vested in the Mullingar Poor Law Guardians, be respectfully requested to put in force the clause appointing an Inspector under the Food and Drugs Act; as several well founded complaints have been received, especially as regards milk." The matter was referred to the Town Guardians.

THE ADULTERATION ACTS.

UP to this there has not been a text book on the very useful code of laws embracing several important statutes on the adulteration of human foods, drugs, seeds, fertilisers, and feeding stuffs. Mr. Richard J. Kelly, barrister-at-law, and a member of the Connaught Circuit, is bringing out what promises to be a comprehensive work on these subjects. Mr. Kelly has devoted much time and trouble to the complete and thorough study of his profession, and has as a proof thereof in several branches produced works of admitted and recognised merit. His "Libel" work is a text book in England, and his Registration of Titles is the only book of its kind in Ireland. We are glad to see a native of the county gain such distinction abroad, and we are proud of the appreciation for his books and himself among men who evidently can afford to recognise merit, and have the intelligence and independence to respect talent and hard work by reason of its being the production of an Irishman or against the worker, by reason of the fact that he has by the best recognised English tests proved his professional capacity—"Galway Vindicator."

ALLEGED ADULTERATED GINGER.

ANALYSTS AT VARIANCE.

AT Skipton on April 7th, Hannah Wiseman, grocer, of Gargrave, was summoned on the information of Mr. A. Randerson, County Council inspector under the Food and Drugs Act, for selling adulterated ginger. Mr. W. A. Robinson (Messrs. Robinson and Robinson, solicitors, Skipton, Settle, and Keighley), appeared for the defendant.—The inspector stated that on February 20th he visited defendant's shop, and, amongst other articles, he purchased four ounces of brown ginger, for which he paid fourpence. He explained to defendant the purpose for which he had bought it, and divided it into three parts, one of which he sent to the public analyst, one part he retained himself, and the other part he left with the defendant. Witness was proceeding to read the report of the analyst, when Mr. Robinson objected to the certificate being read until it was proved.—P.S. Chamley was then called, and stated that the defendant signed a document, by which she agreed to accept the analyst's certificate.—Mr. Robinson remarked upon the unfairness of getting people to sign documents of this description before they had been advised, and for that reason he would ask for an adjournment of the case, in order that the analyst might be present. He (Mr. Robinson) had had some of the ginger analysed by another analyst, and he could only state that it had been found to be of a perfectly pure character. The defendant had unfortunately signed the document, which dispensed with the county analyst's attendance.—Mr. Randerson said he was perfectly willing for the case to be adjourned, so that the county analyst could attend.—The Chairman remarked that the Bench was of opinion that the public analyst's opinion ought to be sufficient in that case, but if Mr. Robinson was not satisfied, he could get his own analyst to attend.—Mr. Robinson said that his analyst, if allowed to attend the Court, would diametrically contradict the public analyst. The case was accordingly adjourned for fourteen days.

THE STARCH IN YEAST SWINDLE.

WE anticipated that the outcome of the ridiculous assertions of Mr. William Jago respecting yeast would be that an attempt would be made to lead bakers and the general public to believe that absolutely pure yeast is not to be had. *The Baker and Confectioner*, in its last issue says:—"In another column we report several important prosecutions for selling yeast to which starch has been added. It will be noticed that some remarkable statements were made by advocates and others engaged in the cases. At Harlesden a baker was summoned for selling yeast which, it was alleged, contained 50 per cent. of added starch. The defendant stated that the yeast was the same as supplied to all the bakers in London. The statement is untrue and absurd. It is a debatable point, which we leave to scientists and experts to discuss (and our columns are open for the purpose), as to whether a slight addition of farina is an advantage or otherwise, but in any case we are of opinion that the addition of 50 per cent., or even 20 per cent., is *not* an advantage to the baker. A few years ago the liberal admixture of starch to yeast was common, but it is not so to-day. To say that bakers in London are foolish enough to buy equal quantities of yeast and starch is contrary to fact. Both Mr. Briant and Mr. Jago, two prominent authorities, agree that absolutely pure yeast, as a commercial product, is impossible. By a recent decision in the High Court baking powder is held to be not a food, and yeast may be placed in the same category. Therefore, it would seem, yeast manufacturers may (we do not say they will, as competition will soon put matters right) add starch in the same way that baking-powder manufacturers add alum to their products with impunity. Herein lies a danger which must not be disregarded. With great respect to the trade as a whole, for which we write, we must admit that many of its members are as careless in purchasing yeast as in purchasing flour. Some, it is true, have not the means at command for making analyses, but the majority are utterly indifferent. We suppose there are unprincipled yeast dealers as there are unprincipled members of every other trade, and it will never do to give these men an opportunity to take advantage of the present state of the law, which allows them to add as much starch as they please. Something must be done, and that without delay. We should like to have the views of our readers and scientists upon this question."

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WYETH'S BEEF JUICE,

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A liquid preparation of the choicest Beef, containing the nutritive albuminous principles in an unaltered and soluble form. It is produced under the careful manipulation of skilled operative chemists, supervised and directed by the highest commercial integrity. The experience of the Medical Profession and the analyses of the most searching character by Eminent Chemists, prove that

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contains all the albuminous principles of Beef in an active and soluble form; that it contains the hæmoglobin of meat unaltered; and that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession. POINTS OF SUPERIORITY OF

WYETH'S BEEF JUICE.

It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.

How **WYETH'S BEEF JUICE** is to be taken:

Wyeth's Beef Juice should always be taken in Cold, never in Boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour, and activity to overworked and exhausted brain and body.

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OF ALL CHEMISTS, CONFECTIONERS, STORES, &c.

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THE PUREST AND MOST WHOLESOME OF ALL SPIRITS.

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THE MERSEY AND IRWELL JOINT COMMITTEE AND SIR HENRY E. ROSCOE'S SEWAGE ANALYSES.

AT the last meeting of this Committee Mr. Alderman Walmsley said he would like to know a little more about the chemistry on which the report as to the effluents was based. It stated: "Results expressed in grains per gallon. Oxygen absorbed from an acid solution of potassium permanganate." In the case of Salford the result was stated at 3.024 in one instance, and 3.696 in another. Now, if Sir Henry Roscoe were present he would like to challenge him upon that point. He was not going into detail, though he was prepared to do so, he preferred to go more closely into the matter when Sir H. E. Roscoe was present, so as to avoid any misunderstanding. He thought they ought to see Sir Henry Roscoe oftener than they did. He was not at all satisfied—not at all—at the way a good many proceedings were carried on; and before the arrangements for another year were made he should have much to say. Touching the case of Salford, he submitted that the Corporation had displayed a commendable desire and had endeavoured to set a good example to other authorities, and ought not therefore to be proceeded against.

Alderman Scowerfott said he shared the views expressed in Mr. Ald. Walmsley's remarks. As far as Bolton was concerned, he was able to say that they were prepared to meet the wishes of the Committee, and he was sure would do so. They were glad to have an opportunity of showing their willingness to do what the Committee desired.

Dr. Hewitt said he quite agreed that they ought to have Sir H. Roscoe, or Mr. Scudder, his assistant, present at the monthly meetings at all events. It was as necessary that the chemist should be present as the chief inspector or the legal adviser, and on that point he thought the Committee should inform Sir Henry Roscoe that they required his attendance at the monthly meetings. But while so far agreeing with Dr. Walmsley, he was a little surprised at the form of the objection he had taken. Objection was taken to the chemistry, but it was a remarkable fact that the same process was applied in all cases, with the result that Salford came out 36 times worse than Swinton or Rochdale. An effluent of which such remarks as "an alkaline effluent in a state of decomposition, and having a fœtid odour; darkens on standing and solids in suspension increase" could be said—was surely not satisfactory.

THE HORNSEY MEDICAL OFFICER OF HEALTH ON INTERCEPTORS.

AT a recent meeting of the Hornsey Local Board the annual report of Dr. Clothier, the able medical officer of health for the district, was received and considered.

Among the paragraphs in the report was the following:—

Each house should be protected from sewer gas by a proper intercepting trap, and its own inlet and outlet ventilators used to ventilate the drains of the house only, and not to assist in ventilating the sewer also, which would bring the sewer gases into unnecessarily close and dangerous proximity to the dwelling. In my opinion no dwelling can be considered secure unless the sewer gases are completely severed from its drainage system.

Further on in the report is a long list of houses in which the occurrence of typhoid fever or diphtheria coincided with the absence of intercepting traps among other defects.

After considerable discussion it was decided to send back the medical officer's report, with a view apparently to the omission of the allusions to intercepting traps. We trust that Dr. Clothier will return the report in its present form. As it now stands it frees him from all responsibility for any evil consequences which may be caused by ventilating the main sewers into the house-drains, and possibly into the houses. It is quite within the option of the Hornsey Local Board to decline to act upon the definitely expressed opinion of their health adviser in favour of intercepting traps. By so doing, however, they incur a very serious responsi-

bility, and one which on reflection we hope they will decline in the interests of the suburb whose health they are appointed to guard. The point for them to determine is whether they will act upon the advice of their technical advisers, backed up as it is by an overwhelming weight of skilled opinion; or will yield to the ignorant and selfish pleading of builders and others whose pockets may be somewhat depleted by the necessary reform.—*Public Health*.

SEWER EMANATIONS AT ST. ALBANS.

THE medical officer of health, Dr. Morison, in his annual report just issued, refers to the manholes. During last summer they were extremely offensive, owing to the want of rain and the consequent difficulty in keeping the sewers sufficiently flushed.

Some months ago a committee of the Council was appointed to take the matter into consideration and report. He still thinks, as mentioned in his report for 1891, that the erection of a sufficient number of Holman's sewer gas destructors in suitable situations would be an efficient means of ventilating the sewers and doing away with all nuisance. But if this is impracticable on account of the expense, he hopes that the Council will not be tempted to close the manholes and substitute ordinary shafts for the purpose of ventilation. The draught in such shafts would be altogether insufficient, and they would run a very serious risk of getting an accumulation of foul gases in the sewers, the increase of pressure from which would have a tendency to force the traps, and allow the sewer gas to enter the houses, a condition of things which would be infinitely worse and more dangerous than any disagreeable smells in the open air.

Drs. Corfield and Louis Parkes, in Stephenson and Murphy's Treatise on Hygiene, recently published (the most exhaustive work on the subject in the English language), recommend that where the manholes give off an offensive smell their action should be supplemented by constructing shafts, six inches or more in diameter, leading from the crown of the sewer to the sides of the road and thence up houses or buildings, clear from all windows and chimneys. These shafts would act principally as exits for foul air, while the manhole ventilators would become inlets, and nuisance to a great extent would be obviated. This is what Dr. Morison should recommend; but he assures the Town Council that it would be worse than useless to attempt to ventilate the sewers by shafts alone. If they will erect supplemental shafts and take care that the sewers are sufficiently flushed, he is convinced that the offensive smells will be got rid of.

WOOD-PAVING IN PARIS.

La Réforme du Batiment, March 25th, 1894, says:—"A correspondent assures us that since the time when wood paving was first laid in Paris the mortality has risen two per thousand; it was 18, it is now 20.

"The Rue de l'Elysée, in which is situated the palace where the President of the Republic lives, is a pestilential swamp, and, when the summer comes, the dust which the wood produces will cause sore eyes and sore throats as in former years."

A YEAR'S GOOD WORK IN NORTH WILTSHIRE.

PREVIOUS to the appointment of Mr. James Ward as Inspector of Weights and Measures for the northern district of the Wilts County Council, a meagre total of some 16 samples represented the trouble taken to secure pure food for the public in that district. During Mr. Ward's tenure of office the samples taken for analysis from March 31st, 1893, to March 31st, 1894, were 181. They comprised the following variety of articles:—Butter, 14 purchased, none adulterated; bread 2, none; coffee 5, 1; cheese 2, none; drugs 9, none; flour 1, none; gin 11, 2; ginger 1, none; lard 11, none; mustard 2, none; milk 90, 13; skimmed milk 2, 1; condensed milk 2, none; pepper 8, none; rice (ground) 1, none; sugar 8, 4; sweets 2, none; tapioca 1, none; vinegar 1, 1; whiskey 11, 3. Total 184 purchased, 25 adulterated; 15.76 per cent. of adulteration during the year. Prosecutions 16, convictions 16, fines £26 11s. 6d.; 7 cases pending; 2 samples remitted to Somerset House, conviction followed; 1 appeal against conviction dismissed with costs.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

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The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

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LENNOX'S WHISKY

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Delivered within London
Carting Circuit, or Carriage
Paid to nearest Railway Station
in Great Britain.

Do not drink Blends of Malt Grain
and Potato Spirit.

Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.

Fretful Babies

are a great anxiety to their mothers and try everybody's patience. Do not be impatient with them. Fretfulness is a sure sign of ill-health, for Nature intended babies to be chubby and cheery; above all, do not give soothing syrups or any injurious remedy, which may make matters worse and at best can only give temporary relief. How much wiser to remove the cause of the trouble! which, in almost every case, arises from the indigestible and innutritious nature of the baby's food. Infants and growing children need food which is not only flesh-forming, but which also contains the organic phosphates (viz., the phosphates taken from a plant, and not chemical phosphates) vitally necessary for the development of the frame—i.e., the bones, muscles, teeth, brain. Without this phosphatic nourishment, for which their nature craves, they become irritable and fretful, and in such cases "Frame Food" Diet is a certain cure. It is the only food which contains soluble phosphates extracted from Wheat Bran, and is therefore, without doubt, the most nutritious food in the world. Nursing mothers find that the phosphatic nourishment in "Frame Food" Diet greatly aids the flow and the nutritive nature of their milk; and the same unique phosphatic nourishment replenishes the drain on the system of Expectant Mothers with the best results for both mother and child. N.B.—"Frame Food" Diet is the cheapest cooked food, 1-lb. tins being sold for 1s. by Chemists, Grocers, &c., 1-lb. sample in handsome enamelled box sent free, on receipt of 3d. for postage, by FRAME FOOD CO., LTD., Lombard Road, Battersea, London, S.W. (Mention this paper.)

Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's Ointment. It is the best general Ointment with which we are familiar, and ought to be a stock remedy in every household."

Private report from Limassol, Cyprus: "I have never found anything to come up to it for neuralgic and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

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GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

Food and Sanitation.

SATURDAY, APRIL 28TH, 1894.

THE CHANCELLOR OF THE EXCHEQUER AND BEER AND SPIRIT ADULTERATION.

THANKS to the publicity we have given to brewers' frauds and Inland Revenue official stupidity the true nature of the dishonest statement made by brewers that beer is not adulterated is now becoming more understood. So far, however, as punishing the brewer for making swipes from sugar, rice, and drugs and calling it beer goes, we are confronted with a *non possumus*, because although every practical person knows that such a concoction has no more right to be called beer than flavoured oleo-oil coloured with annato has to be called butter, yet the Inland Revenue authorities say that the swindling concoction may be sold as beer, and for this reason no prosecution for beer adulteration is possible. We have shown how this disgraceful ignorance has thrown thousands of labourers out of employment by the substitution of rice, sugar, etc., for home-grown barley, of which at least two million quarters have been displaced within the past few years by these substitutes. This may matter little to political hacks like our Chancellor of the Exchequer. The pinch of poverty may turn the

agricultural labourer driven from the land by such folly into a striker, loafer, cadger, or thief. Want may drive him into the workhouse or gaol, and his keep in idleness may swell taxes to a point that harasses and pinches the struggling earners of small salaries—but what is that to Chancellor "Quinbus Flestrin?" His paunch is none the leaner nor his chaps the less weighted with fat, nor, worse than all, is his brain any the clearer or more publicly useful. To hear his ponderous oratorical flatulency on Monday last, cheered by some scores of members of Parliament as ignorant as himself, was to lend one's ears to a grievous performance. Said the lineal descendant of the Plantagenets and rightful heir to the Queen's throne:—

Reference has been made to the purity of beer and spirits. How much has the strength diminished at present? What do you think one of the best known spirit merchants advertises—one of the most respectable of the dealers? Why, 52 per cent. below proof. ("No.") Yes, I have the document in my box, and it is in vain for the hon. gentleman to shake his head.

Mr. Osborne said that if anyone sold spirits at 52 per cent. below proof he would be prosecuted for adulteration and convicted.

The Chancellor of the Exchequer.—I am compelled to inform the hon. member that he is not acquainted with the law. The Adulteration Act states what is the amount of adulteration permitted. If you tell your customer, you may put whatever amount of water you like. (Hear, hear.)

Mr. Osborne admitted that.

The Chancellor of the Exchequer.—Then the hon. gentleman does not understand his own business. I have here Mr. Gilbey's published list, and he does what every man should do: he states on each bottle what is the strength. The hon. member will find it in this list, where the price of each commodity is given. Here is 3s. 1d. for a bottle of spirit. I find in one case the mark "52 U.P." which I understand means under proof. (Hear, hear.) I hope the hon. member will thank me for giving him some instruction with regard to his own business. (Laughter.) Here is the printed list, which has been supplied to me by a friend of mine. I have also an amusing document here which I may glance at,

if the Committee is interested in the matter. I caused to be tested in different parts of the town what these "twopennorths" of spirits were like as sold over the counter. The tests were, as I have said, made in different parts of London. We took poor neighbourhoods and wealthy neighbourhoods. In Bethnal-green on rum the profit on the selling price was 108 per cent.; in Mile End, 91 per cent.; in Whitechapel, 96 per cent.; in Walworth-road, 91 per cent. (Laughter.) It seems to be on a graduated scale (laughter) for when you go to Oxford-street it is 136 per cent., and in Piccadilly it is 230 per cent. (Laughter.) When we come to brany you get a higher class of consumer. In Bethnal-green the profit is 132 per cent.; in Newington Causeway, 164 per cent.; in Whitechapel, 155 per cent. I do not know that brandy is treated on a different scale in the different localities, but in Oxford-street the profit is only 80 per cent., and in the City in a first-class restaurant it is only 142 per cent. (Loud laughter.) On Geneva the profit is—in Bethnal-green 108 per cent., in Oxford-street 165 per cent., in Walworth-road 111 per cent., and in Whitechapel 115 per cent. These are matters which have to be considered (hear, hear), and, looking at the subject all round, I do not think that these are trades upon which an undue burden has been placed by the proposals of the Government. (Cheers.)

Had this rubbish been talked by a temperance orator, it might be passed without notice, but as it has been uttered by a responsible minister of the crown it is necessary that it should be exposed. In the first place Sir William V. Harcourt's figures have really nothing to do with the purity of spirits, inasmuch as purity depends on the articles used in their manufacture. It is due to Sir William Harcourt, Mr. Gladstone, Sir Algernon West, and a few other friends of man at other people's expense, that whiskey is in the main a vile liquid produced from potatoes, Indian corn, damaged grain, dates, drugs, and like trash, instead of being distilled from fermented grain. This government-created swindling has put millions into some distillers' pockets, but the price of adulterated whiskey is the same to the consumers. Even so foolish a person as the Chancellor of the Exchequer ought to be able to see, therefore, that this assertion that the extra sixpence will come from the distiller is arrant nonsense. It will come out of the long-suffering spirit drinker, for the distiller will recoup himself by the use of even cheaper trash than he now employs, whilst it will still more severely handicap the very few distillers of genuine whiskey, such as Lennox and Sons, Dumfries, John Jameson's, Dublin, or Old Bushmills, whose whiskeys have a reputation above being tampered with.

In point of fact the tax will not be a feather-weight to the distiller of trash, whilst it will do much to lead publicans to sell less and less pure spirits.

As regards the beer tax, we analysed this last week, and the fact that our analysis and conclusions were in every particular accurate has since received emphatic corroboration. The London Licensed Victuallers met on April 23rd, in the Queen's Hall, and Mr. Charles Deakin, speaking on Sir William Harcourt's proposals, thus let the cat out of the bag. He said:—

The Chancellor of the Exchequer seemed to glory in the fact that the additional tax could not possibly come out of the pocket of the consumer, but he was mistaken. Did any of them suppose that the brewers would submit to the 61. per barrel coming out of their own pockets? The brewers would reduce the gravity of the beer, and lower gravity meant a weaker beer, and the consumers would be the sufferers. As to the £540,000 that Sir William Harcourt anticipated he would get by the end of the year, he believed that little scheme would be defeated. There was another serious aspect of the question that Sir William had entirely overlooked. It was patent to everyone that when the duty on malt was directly charged on beer it had the effect of driving out a number of small breweries who purchased their materials from local farmers. He found that no less than 512 brewers in England and Wales had ceased to brew. If the proposed increased duty were levied, the effect would be that 35 per cent. less malt would be used in the manufacture of beer, and that meant a loss to the farmers of the country of £40,000 per year, brought about by a Government who were anxious to pose as the friends of the agricultural labourer.

Upon this question of the purity of beer and spirits we have, again, a torrent of assertion showered upon us that were the brewers compelled to brew from malt, hops, yeast, and water, and the distiller forced to use malt and grain, they would, in revenge, not use English barley—that in point of fact English barley is inferior for brewing purposes. Upon this point Mr. Stopes writes:—

Both scientific and practical knowledge of the question is attributed to me. Many of the important works I have executed for some of the largest firms throughout the world, and much of my writing, bear testimony to my claim to be able to form an opinion and to express it when formed. Britain can and does produce barley that malts perfectly. British malt properly made can and does brew beer that is unsurpassed. Sugar is not required, and its use is not necessary. In support of this contention I would point to the fact that the largest brewery in Britain uses none whatever, and the second largest so small a quantity that it cannot affect the exquisite beers brewed by the firm, whose name is a household word. Were my own judgment at fault, this one fact is proof of the fallacy of those who defend the excessive use of substitutes. In addition there are many brewers throughout the country who use malt and hops only, and yet produce first-class ales that have all the good characters attributed to sugar beer, and none of the defects. The whole matter does not rest with farmers; maltsters and brewers have fully as

much to do with it—I venture to think even more. The best barley can be spoiled by unintelligent working under conditions fatal to securing sound malt. How many maltkilns are working to-day that can properly and soundly dry malt? And in how many malthouses in Britain has the maltster any real control of the conditions of his malthouse?

The farmer is not attacking the brewer. I claim that no other man living has said or done as much as I have to keep friendly relations on this vexed subject between the two great industries of farming and brewing. But as the less cannot contain the greater, so it is evident to any impartial critic competent to form an opinion that the more important industry of agriculture is suffering from the rapid displacement of barley malt in beer by a large variety of materials that, if not adulterants, are certainly substitutes. A light gravity sugar beer is not fair to the consumer; and if all brewers used sugar in the proportion that some do, a most serious blow would be given to our barley-growers, maltsters, and the large bodies of intermediaries who have for so many generations subsisted upon our distinctly national industries of condeaing, malting, and brewing. Already a substitution of nearly thirty per cent. of other material for barley malt has had a disastrous influence upon these industries. The brewer is rapidly deserting the farmer. His chief motive is to secure the maximum profit. This he is perfectly entitled to do, but let it be done openly and straightforwardly. It can be done two ways, also, for if agriculture were more flourishing brewing would not be almost stagnant, and we should not witness the rapid disappearance of so many smaller brewers and maltsters.

If none of our brewers could use barley malt solely, the contention that sugar is necessary might hold. In face of the facts I fail to see that it can. On the question of the substitution of cereal extracts for barley malt, and its relation to the subject of the adulteration of beer, I have often spoken, and written much. I do not yet alter anything I have advanced, excepting that in my opinion I say decidedly the time has come when such substitution ought to be regarded as adulteration. Good fats or beef dripping are as harmless and pure as butter fats in milk. The law has decided against the sale of margarine as butter. An extension of the law should decide that cereal starches and sugars chemically treated are not true constituents of beer, and that their legal use can follow only the issue of a licence, a declaration of use, and the payment of ex gratia duty.

What stands in the way of honest beer and spirits, and of putting into cultivation another 1,500,000 acres of barley land, with employment for thousands of now starving labourers? Nothing but the ignorance of ministers like Sir William V. Harcourt, and the stupidity and laziness of the Inland Revenue authorities, all of which is truly a pretty object lesson in the truth of the Swedish Chancellor's words to his son: "Look around," said he, "and see with what little wisdom the world is governed." Meanwhile the seed we have sown is growing. Little by little public interest is being aroused in this pure liquor-question, and we hope to soon see the day when honest beer and spirits may once more be bought anywhere in the three kingdoms.

ENCOURAGING THE SALE OF MARGARINE AS BUTTER IN RESTAURANTS.

SIR JOHN BRIDGE may be in many respects an excellent magistrate, but as regards the Food and Drugs' Acts he is often very hopelessly at sea. From previous decisions of his we gather that he regards the addition of water to milk and fat abstraction as one and the same thing. He now appears to consider it a holy and wholesome proceeding for an hotel proprietor or restaurant keeper to palm off margarine for butter upon his customers. There has been much said in condemnation of this practice, and the lamentations have been loud and many that the law has not been put in motion to stop it. It is interesting, therefore, to see how much encouragement is given to vestries and officials who go out of their way to endeavour to bring restaurant keepers to justice. At Bow-street, on April 20th, Messrs. Fredsam and Sealrook, coffee-house keepers, 20, Catherine-street, were summoned by the Board of Works for the Strand District for selling butter containing at least 90 per cent. of margarine.—Thomas Frederick Strutt, Sanitary Inspector, proved having purchased at the defendants' place of business a cup of tea, a roll, and pat of butter for sixpence. He afterwards told the person who served him that the butter was required for public analysis, and he divided it into three parts. He produced the certificate of the public analyst, which showed that the so-called butter contained 90 per cent. of margarine.

One of the defendants who appeared to the summons said he had no intention to defraud, and was very sorry for what had been done. Sir John Bridge: You ought to get good butter, but I do not think the statute was meant for a case of this kind. On this occasion you will only have to pay a fine of one shilling.

William Henry Moon, 8, Catherine-street, was summoned for a similar "offence." Mr. Strutt produced a certificate showing that the butter he purchased at this establishment contained 90 per cent. of margarine. Defendant denied the correctness of the analysis, and contended that the butter contained no more than 25 per cent. of margarine. Sir John Bridge imposed a fine of 1s. only, no costs being allowed.

In each of these cases the analysis would cost at the least 10s. 6d., added to which there is also the expense of a summons, so that we are confronted with the fact that Sir John Bridge actually punished the Strand authorities for endeavouring to protect the public, and compelled them to lose some 12s. per case for bringing these offenders into court. If the Hon. Horace Plunket, M.P., or Sir R. H. Paget, M.P., are as much in earnest in endeavouring to stop these practices as they pretend to be, we ought to see cases like this brought to the attention of the Home Secretary and Sir John Bridge receive a sharp reprimand—for what does such a decision do if it be not to encourage every hotel and restaurant keeper in the Strand district to sell margarine instead of butter?

"LLOYD'S EIGHT PER CENT. WATER HERD OF COWS" AT HUDDERSFIELD.

It seems as though we are never to hear the last of the ridiculous allegation of Mr. F. J. Lloyd that the milk of a herd of cows contained eight per cent of water. At Huddersfield on the 18th inst. Joseph Cottam, farmer, Leeds-road North, was charged on two summonses with selling adulterated milk. The Town Clerk (Mr. H. Barber) appeared for the prosecution, and Mr. Fletcher (Meller and Fletcher, Holmfirth) for the defendant.—James Lightfoot, a sanitary inspector in the employ of Huddersfield Corporation, said that on Thursday, the 15th of March, he saw a boy named Harry Lewis, who was in the employ of the defendant, with a horse and cart and milk cans in Green-street. He asked the boy for a pint of new milk from one can, and the boy supplied it to him, and witness paid him twopence for it. He then asked what was in another can, and the boy told him it contained new milk, and witness purchased a pint of that, and paid twopence for it. He told the boy he had purchased the milk for analysis, divided each sample into three, gave the boy one part of each sample, sent one part of each to the borough analyst (Mr. George Jarman), took the other part of each sample to the Sanitary Office, and now produced the latter two parts. The certificate of the borough analyst now produced stated that the first sample contained 2.73 per cent. of butter fat, 8.01 of solids not fat, and 89.26 of water, and he was of opinion that the sample contained 6 per cent. of added water, and that it had been impoverished by the removal of 9 per cent of butter fat. The certificate produced as to the second sample stated that it contained 2.7 per cent. of butter fat, 7.87 of solids not fat, and 89.43 of water: and he was of opinion that it contained at least 7 per cent. of added water, and that it had been impoverished by the removal of 10 per cent. of its butter fat.—In cross-examination the witness said he did not know whether the borough analyst adopted the Somerset House standard of 9 per cent. for solids not fat. He knew nothing about the analysing of milk. Mr. Barber objected to Mr. Fletcher cross-examining the witness on the borough analyst's certificate in his absence.

Mr. Fletcher said he had sent round to the borough analyst's office, and found that unfortunately he was away attending the funeral of his brother.—Mr. Barber said he did not object to an adjournment.—Mr. Fletcher said he would not ask for that. He then said that so far as he knew the borough analyst adopted the Somerset House standard of nine per cent. of solids, and then put it that if the milk did not contain that percentage there was added water; but it had been held that milk containing 8.67 per cent. of solids was good milk, and a conviction quashed on appeal.—The Clerk: In that case, of course, there would be evidence for the defence. If you can bring cogent evidence of the milk not having been tampered with, the Bench will not convict.—Mr. Fletcher said here was a sample containing 8.01 per cent. of solids; therefore according to the case quoted, it might be pure milk, on the borough analyst's own certificate. He (Mr. Fletcher) had had the other part of the milk analysed, and it was found to be equal to the Somerset House standard, and the borough analyst's certificate showed that the percentage of butter fat in the samples was up to that standard—namely, 2.5 per cent. The defendant's analyst found the butter fat to be 2.63 per cent. in one case, and 2.64 in the other, which was higher than the Somerset House standard. A London analyst had found that when he analysed a sample from a cow he saw milked, in a dry season, the result showed as much as 8 per cent. of added water, and that was what he would have certified if he had not seen the cow milked, and taken the sample and analysed it at once. At the time the defendant's samples were taken the weather had been very dry.—The Town Clerk submitted that the Act provided that the production of the analyst's certificate was sufficient evidence unless the defendant required that the analyst should be called as a witness, and the defendant could not get over the fact that butter fat had been extracted and water added.—Mr. Fletcher: But that was so in the case where the analyst saw the cow milked.—The defendant gave evidence, and said he milked the cows that gave the milk the boy took out on the morning in

question, and to the best of his knowledge no water was added, and no butter fat was abstracted.—The Town Clerk said he took it now that the analyst's certificate was conclusive evidence, and that no evidence was called to rebut it.—The Magistrates' Clerk said that was not so; the defendant's evidence went to controvert it, and was given to support the contention that the milk might be good with such an analysis. It was a question now of weight of evidence.—The magistrates fined the defendant 10s. and 7s. costs in each case.

THE ETHICS OF CO-OPERATION.

The Times, April 23rd, contains the following significant letters, which may help towards the education of Mr. Acland, M.P., and Mr. Arnold-Forster, M.P.

"THE KENSINGTON CO-OPERATIVE STORES.

TO THE EDITOR OF *The Times*.

April 18th.

"SIR,—*The Times* is my first and last resource in a case like the enclosed. I scarcely know how to express my very strong feelings, for fear of an action for libel. My holding in these stores is so small that they do not give me a thought, but all who know anything about them marvel at their proving such an utter failure. Edward Scriven, managing director, and the secretary, both, I presume, paid servants and bound to push the concern, have opened my eyes, who am a perfect stranger to them.—Your obedient servant,

"Hadley Hurst, Barnet.

"WILBRAHAM TAYLOR.

"Managing Director's Office, the Kensington Co-operative Stores (Limited), West Kensington (near Addison-road Station), London, W., April 16th, 1894.

"DEAR SIR,—No doubt your attention has been drawn to a very ingenious rig in our shares. I have sold the whole of my holding of 3,000 shares, and would strongly advise you to sell yours, as I am confident in a few weeks the price will be about 4s. to 5s. (or less).

"If you wired either the secretary or myself on receipt of this I think we could obtain for you 7s. per share 19s. paid.—Yours faithfully,

"EDWARD J. SCRIVEN, Managing Director.

"W. Taylor, Esq."

These letters need no comment

OUR LIBRARY TABLE.

UNDER the title "Food and Drink Rationally Discussed," Mr. Thomas Dutton, M.D., has prepared a second edition of the work issued in 1892, then entitled "Digestion and Diet," which is published by Mr. Henry Kimpton, 82, High Holborn, price 2s. The book is written in a popular style and is full of facts gathered into a small compass. That it is liberal-minded our readers may judge from the following extract:—"I think," says Dr. Dutton, "our friends the teetotalers would do more good if, instead of going about declaring that alcohol is answerable for all the crime and disease of the present day, they devoted their attention to the subject of *pure* beer, spirits, and wine, for it is the belief of a large majority of people that harm is not so much caused by indulgence in these beverages as by the adulteration of them, and before embracing total abstinence principles, I for one should like to see what effect the use of *pure* aged spirits, unadulterated beer and wine would have on the health of the community after a few years' trial."—Dr. Dutton's wish would be possible if we had a Chancellor of the Exchequer and Inland Revenue Commissioners possessed of brains. However, it may one day come to pass that beer will be the honest product of malt, hops, and yeast, and again afford employment to English workmen in growing barley, instead of to nigger rice and sugar growers. Then it may be a safe thing to risk drinking the ordinary beer of commerce, which at present it, decidedly is not; but all the same, Dr. Dutton's advice is good, for our own experience has shown us that the persons who know least about what is the real harmful character of beer or of whiskey are, the teetotalers.

HORLICK'S
MALTED
For Infants
and Invalids. **MILK**
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

AN INQUIRY INTO THE RELATIVE MERITS OF BUTTER *v.* BUTTER SUBSTITUTES.

VI.

(Continued from page 125.)

With the tables and figures to give results of these experiments, it may be superfluous to add the author's conclusions, as these may be had by reference to these data; but observations in the course of the experiments yield a more definite and more extensive evidence than can be expressed in figures. The evidence accords closely with the results of previous experiments of Von Meyer, Atwater, Rubner, and others, in giving preference to butter in its digestion. With a scanty amount of an emulsifying agent, this is more apparent than with a sufficient quantity or an excess. There is but little difference in the way in which oleo-margarine and butter break up into an emulsion, or in their appearance when agitated, except that the globules in the case of butter are somewhat finer; the difference is in the stability. How important this question of permanency of an emulsion may be, is, I think, difficult to determine, since during digestion the food is kept in constant motion.

The minute subdivision does not take place with oleo-margarine as readily as with butter, as is seen by reference to the tables in which the process was carried until subdivision was very fine, as in Tables III. and IV., and it is seen that the proportion used is somewhat larger.

One fact, which may present a suggestion, if nothing else, is the difference in the results with cotton-seed and sesame oils, as shown in Tables VI. and VII. The greater ease with which the latter formed an emulsion in the two experiments, was more striking than the results as expressed convey. It is regretted that this observation was made so late in this inquiry that there was no opportunity for following up this point more extensively and accurately; but, if this observation should be substantiated by subsequent investigation, this difference would be of some importance in a consideration of the digestibility of oleo-margarine.

Therefore, as a food for the well, there is scarcely difference enough between butter and oleo-margarine on grounds of digestibility to make it a matter of very much choice. However, all oleo-margarines are not alike in this respect, as, for instance, compare L with S or T.

The above observations have been made with reference to a good butter alone, but when compared with a poor quality, the same does not hold; as is seen by results with O, which was a cheap butter, bought for twenty-five cents, while P and R were bought at the same time for thirty-five cents. The results with this poor quality of butter are no better than those obtained with oleo-margarine, and in none of the attempts was an emulsion formed with it which equalled those with S and T or A. Therefore, between a poor butter and a good oleo-margarine the above statement as to slight preference would scarcely hold.

As a food for invalids, this difference is sufficient for careful consideration, especially when there is any digestive disturbance which involves pancreatic digestion, as the difference is more apparent when a limited amount of emulsifying agent is used than when an excess is present.

The point that oleo-margarine is an uncooked article, and therefore undesirable as food, has been raised, and perhaps deserves a passing notice. When, however, the object of cooking is considered, and the benefits which result are recalled, it is seen there is little ground for prejudice from this source. With meats, at least, there is scarcely any object, other than to produce a more agreeable flavour and to soften the connective tissue, that the soluble portions may be more easily separated in the digestive process. With the fats in oleo-margarine this separation has already been effected by their process of extraction, and they consist, therefore, of the digestible portions alone, while the agreeable flavour is produced in another way.

Scientific men, and persons who, either from their occupation or otherwise, are fully acquainted with the subject and are qualified to judge fairly of the product, are quite unanimous in their favourable opinions of oleo-margarine as a healthful article of food.

In the course of this inquiry I have found but one, and that a strong opinion, that oleo-margarine is of itself a good, healthful article of food, and much better than the poorer grades of natural butter.

In the report on food and food adulterants, Dr. Wiley quotes the opinions of many of the leading chemists, who unanimously give their opinion as to its wholesomeness, as the following abstracts from the reports* mentioned show.

Prof. C. F. Chandler says:—"I take the ground that there is nothing in any one of these materials in any sense unwholesome, and nothing in any one of them which makes it inferior as an article of food to dairy butter.

"I am perfectly familiar with the materials employed and the different processes, and know there is nothing whatever used either in material or process which is unwholesome, or in any way deleterious to the public health."

The following distinguished chemists, after carefully studying the manufacture, have made the most decided statements in favour of this new article of food:—Prof. George F. Barker, University of Pennsylvania; Dr. Henry A. Mott, jun., New York; Prof. G. C. Caldwell, Cornell University, Ithaca, N. Y.; Prof. S. W. Johnson,

Yale College, New Haven, Conn.; Prof. C. A. Goessmann, Mass. Agricultural College, Amherst, Mass.; Prof. Henry Morton, Stevens' Institute, Hoboken, N.J.; Prof. Charles P. Williams, Philadelphia, Pa.; Prof. W. O. Atwater, Wesleyan University, Middletown, Conn.; Prof. J. W. L. Arnold, University of New York.

I would further say that this question is one on which there is no difference of opinion among scientific investigators familiar with the chemistry of dairy products and fats. I have never seen a statement emanating from any person having any standing among scientific men, in which a contrary opinion is advanced.

Prof. G. F. Barker, University of Pennsylvania, says:—"I can see no reason why butterine should not be an entirely satisfactory equivalent for ordinary butter, whether considered from the physiological or commercial standpoint."

Prof. G. C. Caldwell, Cornell University (in reference to the oleo-oil), declares:—"It is, when thus prepared, a tasteless and inodorous substance, possessing no qualities whatever that can make it in the least degree unwholesome when used in reasonable quantities as an article of food."

Prof. S. W. Johnson, Yale College, states:—"Oleo-margarine butter has the closest resemblance to butter made from cream, in the external qualities—colour, flavour, and texture. It has the same appearance under the microscope, and in chemical composition differs not in the nature, but only in the proportions, of its components. It is, therefore, fair to pronounce them essentially identical."

Prof. C. A. Goessmann, Massachusetts Agricultural College, writes:—"A careful examination into the character of the material turned to account, as well as into the details of the entire management of the manufacturing operation, has convinced me that your product is made with care, and furnishes thus a whole some article of food."

In the report of the Commissioner of Internal Revenue, 1887, are statements from collectors of districts in Pennsylvania, New York, Ohio, Illinois, Indiana, and Colorado, comprising in all eleven districts. These reports are made from the returns of articles used as reported by the manufacturers of oleo-margarine, as required by law, and from their familiarity with or investigation of the ingredients and processes used in the production of oleo-margarine in the different factories in their districts.

The following list shows the various materials used, and was made from the monthly reports, and also from special reports from the collectors in whose districts oleo-margarine factories are located.*

KIND OF MATERIAL.	No. of factories in which used.
Oleo, oleo-oil	31
Lard, leaf lard	14
Cotton-seed oil	10
Milk	34
Salt	37
Colour—annatto; butter colour	37
Butter, dairy butter, creamery butter, natural butter	31
Returned oleo-margarine	2
Neutral, neutral lard	22
Salad oil	10
Beef fat, beef oil	6
Cream	14
Glycerine	2
Sugar	3
Sesame oil	5
Vegetable oil	2
Old butter	1
Butterine	2
Buttermilk	1
Nut oil	1

The following are opinions expressed by the different collectors, in regard to its healthfulness:—

E. A. Bigler, Collector, First District, Pennsylvania:—"I cannot learn that any substance deleterious to the public health was used by this company in making their product."

Robt. Black, Collector, First District, New York:—"Great care is exercised by these parties not to allow any unfit article to be put on the market, and I am therefore safe in saying that oleo-margarine, as made in this district, is a perfectly healthful article of food, and much purer than many other things now in our markets."

Frederick Gerker, Collector, Twenty-third District, Pennsylvania:—" . . . From the reports of the manufacturers, and the personal observations of my deputies, I am of the opinion that none of the ingredients used are deleterious to public health."

Jas. W. Newman, Collector, Eleventh District, Ohio:—"I have inspected the factory of the above company, and found it cleanly and free from unpleasant or noxious odours."

Jas. A. Hanlon, Collector, Twenty-eighth District, New York:—"The factory and all things appertaining thereto are as cleanly and sweet as any dairy in the country; and, as far as this office has any experience, we do not hesitate to pronounce the oleo-margarine produced at this establishment a good, pure, and wholesome article, fit to be consumed by any person without the least injurious effect."

Jno. A. Sullivan, Collector, Second District, New York:—"The above ingredients, separately or in combination, are not unwholesome or deleterious to public health."

* Bulletin 13, U. S. Department of Agriculture, Part I., 1887, pages 18-21.

"As to their manipulations, these factories conducted their business in a cleanly manner, being fully as thorough in this respect as the average butter dairy or creamery; and, as the end sought was the production of an article having a high commercial value, and the building up of a reputation for excellency in manufacture, they naturally used only pure, fresh, and wholesome materials."

J. H. Farley, Collector, Eighteenth District, Ohio:—"I find the factories conducted with due care as to cleanliness and quality of material used; and, in so far as I have knowledge, I believe the oleo-margarine thus far manufactured here to be as healthful, nourishing, and clean as other oleaginous substances, whether naturally or mechanically combined."

R. Stowe, Collector, First District, Illinois:—"I cannot ascertain that there is anything used in this district in the manufacture of oleo-margarine that can possibly be construed as being deleterious to the public health, either in itself or in the manipulation."

Wm. D. H. Hunter, Collector, Sixth District, Indiana:—"That the manufacturers do not use any other ingredients in the manufacture of oleo-margarine than what they report on their form, No. 216; that the material used is clean and pure, and in his opinion the oleo-margarine, as manufactured, is as healthful as butter of the best grades." (From report of the deputy.)

J. F. Benedict, Collector, District of Colorado:—"I have given the matter proper attention, and fail to discover that any substance deleterious to the public health is used in the manufacture of oleo-margarine in my collection district."

The general opinions, as held by those having no special knowledge of the subject, or at least no other than a practical one, are perhaps of less importance than interest, but indicate the way oleo-margarine is regarded by those having no other interest than consumers or disinterested parties. Many of these opinions were very positive, not only from the few who know something of it, but also from the many who have absolutely no knowledge of it.

Among those who possessed a practical knowledge of the subject as a rule, very favourable opinions were held, and many used it in their homes. Inquiry made in all factories visited gave the same evidence, that, with very few exceptions, all employees used the oleo-margarine.

By other people, who have no particular knowledge of the subject, at least no more than most of persons have about ordinary food, more or less prejudice is shown. This is partly based on misapprehension of the ingredients used (and this is usually so great as to be ludicrous), and partly because custom has so firmly installed the belief that, as butter is good for bread, therefore nothing else can be fit for such use.

RÉSUMÉ.

There was found no cases in which substance were used which were not cleanly or wholesome; and it may also be added that no case of adulteration with unwholesome articles, in which the facts were well authenticated, has come to the author's knowledge, although search and inquiry have been constantly made. Stories of such as have been brought to notice have not stood the test of investigation.

The ingredients are those which find common use in many domestic ways, and in themselves, when of good quality, are wholesome, and in no way injurious when taken as food; and, as stated above, no grounds exist to reason that other than such quality is used. From these a mixture is made by a process of manufacture which is simple, and which would in no way make an unhealthy compound. This product so nearly resembles butter in appearance and taste that experienced persons are not able to distinguish them with any degree of certainty.

Oleo-margarine will resist rancidity longer than butter will under the same conditions.

The risk of parasites from the use of oleo-margarine is one of possibility more than probability, and is one of those many risks which we are at present, of necessity, daily incurring, but from which we seldom suffer any tangible effects.

In nutritive principles, as shown by Prof. Atwater, it compares so favourably with butter as to present a difference almost too slight to be estimated, except by the chemist.

From the evidence we have of the digestion of the different fats, it would appear that there is a slight difference, and this in favour of butter. Such results are not conclusive of the actual digestion as accomplished by nature, but all agree in placing butter before oleo-margarine, and also agree that this preference is slight.

Popular opinion in regard to oleo-margarine is, in general, prejudiced, and, as has been said, is due in a great measure to mistaken ideas of its composition, and to the fact that, by people in general, it has been known and is still considered as adulterated butter. This term is rather an unfortunate one, and scarcely just, because of the universal revolt against anything with which this word is associated, without inquiry into its significance; and it would seem better to regard this product as a distinct article of food, since it is now legally recognised, and its manufacture is allowed.

ADULTERATED GINGER AT GARGRAVE.—At the Shipton Petty Sessions on Saturday, before Mr. J. Slingsby and other justices, Hannah Wiseman, grocer, of Gargrave, was fined 10s. and costs for selling adulterated ground ginger. Mr. Hiley, a West Riding County Council solicitor, prosecuted, and proved the case by calling Mr. A. Randerson, inspector under the Food and Drugs Act. Mr. W. A. Robinson defended.

POPULAR BEVERAGES AND THE PUBLIC HEALTH.

THERE are a thousand and one beverages, in universal and quite unquestioned use, of which the Government and the municipal authorities take no cognisance, and concerning which medical men, sanitary philosophers, and political economists make little note; but which, nevertheless, have an important bearing, in their direct or indirect influence, on the public health. This group includes the alleged, but by no means always genuine, products—domestic and imported, natural and fabricated—of the countless springs, whose tastefully-bottled and lavishly-certified waters invariably cure something, and usually help everything, and also all that unenumerated family of still, or sparkling, natural or concocted beverages, saline, "mineral," alkaline, and "soda" waters, the very names of which would fill a respectable volume, including the almost endless list of aërated claimants, from ginger-ale to "Thea-nectar" and orange phosphate—the prevailing characteristic of all being that of fizzling trashiness and palpable unwholesomeness.

That our national stigma, *dyspepsia*, and the increasing prevalence of urinary and kidney diseases are largely attributable to this irrational but universal habit of indiscriminate drinking, is too evident to admit of serious question. In this connection it is noteworthy that mortuary reports are beginning to ascribe certain lesions to "a too free use of mineral waters." This bibacity has become a national dissipation. Custom, artificial habit, or ephemeral fashion, and not the sense of thirst or the needs of the body, determine the character, frequency, and extent of the libations. The morbid palate is permitted to become sole dictator, and the deluged and outraged stomach is left to wrestle with the inevitable consequences as best it can.

In their zeal the temperance people train all their artillery against the "demon of the still"; the pulpit too often handles the subject from a classically conservative standpoint, while the medical profession absolves itself through occasional discussions and dissertations on the necessity or futility, as the case may be, of the use of alcoholics in fevers and wasting diseases, and by suffering their names to be appended to popular advertisements of shotgun formulas and certain conglomerations of saline, mineral, earthy, and organic constituents, as disclosed by the analyses-to-order "pharmaceutical chemist," whose name was never heard of outside the bottling-room of "The Paralyser Mineral Spring Company" from which he receives his salary.

The Medical News, Philadelphia.

FOOD PRESERVATIVES AND AGRICULTURAL DEPRESSION.

A MEETING of the Gloucestershire Chamber of Agriculture was held on Saturday, at the Spread Eagle Hotel, Gloucester; Mr. T. H. Hulls (the vice-president) in the chair.—On the motion of Mr. Friday, a resolution was passed thanking the Statistical Committee of the Central Chamber for having exposed the unfair taxes both for imperial and local purposes levied upon agricultural land, and suggesting to the Central Chamber the desirability of a deputation to the Chancellor of the Exchequer to impress upon him the views of the agricultural community upon this question.—Mr. Embrey, the county analyst, read a paper on "Food Preservatives and Agricultural Depression." He said salicylic acid and boracic acid were largely used for preserving butter, beer, and cider, boro-glycerine for curing bloaters and bacon, and crude gelatine for preserving cream. The continued use of salicylic acid produced dyspepsia. These injurious antiseptics were largely used for preserving food products exported to this country. If food must be imported to this country duty free we had a right to say it should be free from noxious antiseptics. If such importations were excluded foreigners would be compelled to send better stuff than they now did, or else keep it themselves, and leave us to develop our own resources. A discussion followed.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(G. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON. E.

THE PHILADELPHIA "MEDICAL NEWS" ON MARGARINE.

In an editorial note our contemporary says:—"It is estimated that about fifty million pounds of this food-product are annually manufactured in the United States. In many ways as good a food as butter in some respects, and for certain purposes superior to butter, we waste several hundred thousand dollars in taxes in the attempt to restrict its use in the interest of the butter-makers, instead of seeking rightly to utilise it as a proper food."

THE BARBER'S SHOP AS A SOURCE OF CONTAGION.

DR. GEORGE T. JACKSON, of New York, called attention to the great importance of this subject as a matter of personal hygiene. There was great difficulty in disinfecting some of the instruments used by barbers, especially the hair-clipper. Ringworm of the scalp, syphilis, alopecia areate, and numerous other annoying diseases were in many instances directly traceable to the barber's shop. The finger-nails of the barber, the towels used, and the head-rest of the chair were also sources of infection. In France and Germany stringent rules had been adopted to prevent the spreading of disease by such means. This paper was presented in the hope of arousing professional opinion to the importance of the subject.

Dr. F. C. Curtis, of Albany, called attention to the fact that it was not a very long time since the barber had been one of our fraternity. We criticised the practice of the midwife, and said it was important that the barber should receive similar attention. Probably the milder varieties of disease mentioned were communicated much more frequently than the severer ones. It was time that public attention was called to the importance of the subject.

Dr. McCracken, of West Troy, had been able to trace one hundred and twenty-six cases of ringworm of the scalp, in a public institution under his care, to the use of a single hair-clipper. The disease had ceased to appear after the objectionable instrument was disposed of. Thus, the statement of the reader of the paper was abundantly verified.

WATER FOR WHISKEY AT BEXLEY.

GEORGE MARLER, of the Blackbirds, Blendon, Bexley, was summoned at the Dartford Police-court, on April 7th, for selling adulterated whiskey.—Mr. Chancellor appeared for defendant, who pleaded guilty.—Mr. Geo. Tucker deposed to buying a pint of whiskey at defendant's house, for which he paid 2s. 8d., and produced the certificate of Dr. Adams, county analyst, showing that the spirit was 7.58 below the legal limit.—Mr. Chancellor urged in mitigation of the penalty that the spirit was sold to defendant five points lower than it should have been in mistake, and when a fire occurred at defendant's house shortly after, the whiskey was put into a barrel which had been "in soak," and this accounted for the adulteration to a large extent. His client had not tampered with the whiskey in any way.—The Chairman said defendant would be fined £5 and costs.—Defendant: There was no intention on my part to.—The Chairman: Don't talk about your intentions, please.

SUPPRESSING MILK ADULTERATION AT LEICESTER.

At the Town Hall on April 16th, Daniel Williams, farmer of Co. br., was summoned for selling to the pre-vice of John A. Kins, milk which was not of the nature, substance, and quality demanded, having been adulterated with 18 per cent. of added water, on March 25th.—The Town Clerk (Mr. J. Storey) prosecuted, and Mr. H. Bray defended.—Tom Bent, an inspector under the Food and Drugs Act, said on the morning of Sunday, March 25th, he was standing on the Aylestone-road near the tram terminus, when he saw defendant's son drive up in a cart containing a churn of milk. He went up to where a youth named Atkins was standing ready to receive the milk on behalf of his father, who was a registered red milk seller living at Aylestone Park. Witness asked for some of the milk, but was told by A. Kins he could not be supplied, as it was in the course of delivery. Witness then, in the exercise of his authority, took a sample, which he divided into three separate parts, giving one back to Atkins, sending the other for analysis by the public analyst, Dr. Priestley, and keeping the other one himself.—In answer to Mr. Bray, witness said he did not know that at the time he took the sample defendant had made an assignment for the benefit of his creditors, and that neither the milk nor the cows that produced them really belonged to him.—The certificate of the analyst was here put in, showing that the milk contained 18 per cent. of added water.—John Atkins, who manages a milk business at Aylestone on behalf of his daughter, said he had made a contract with defendant for the supply of pure new milk last September at a price originally fixed at 7d. per gallon, but later he paid 10d. per gallon.—Cross-examined: He had no written warranty for the quality of the milk, and had more than once asked defendant's son how much water his father put in the milk. He knew Mr. Williams fed his cows on grains and barley straw, and did not think that food would produce very good milk.—Dr. Priestley, in reply to Mr. Bray, said barley straw and grains would tend to make the milk poor, but not to the extent of more than five per cent.—Mr. Bray first submitted that as the defendant made an assignment to his creditors on March 19th, the cows did not belong to him, and therefore if anyone was liable it was the trustee of the estate. Further, the fact that only 7d. per gallon was the price agreed to be paid for the milk showed that no contract could have been made, the price being altogether too low. Again, as defendant was charged with selling the milk to John Atkins, and it had been proved that Atkins merely managed the business for his daughter, the summons was bad. Notwithstanding the evidence of the analyst, he would call witnesses to prove that the milk was delivered to Atkins in the same state as it was received from the cow.—Defendant was called, and said the milk was not tampered with in any way before it was delivered to Atkins. He denied that any contract was made for the supply of pure new milk, and he simply agreed on behalf of his daughter to sell a quantity of milk at 7d. per gallon. He had been a farmer all his life, and knew that barley straw as food produced poor milk.—Mrs. Williams said she and her husband had been in the farming business for 18 years, and this was the first time any proceedings had been taken against them for an offence of this kind. After the assignment was made the business was carried on just the same as before.—Replying to Mr. Bray on the point of law, the Town Clerk contended that the assignment did not affect the case. It had been proved that no alteration had been made in the business since the assignment; Mr. Atkins had received no intimation of the fact that the assignment had been made; and he (the Town Clerk) submitted that nothing had been disclosed in evidence that would materially alter the facts as shown by the prosecution.—A legal argument ensued, and in the end the Bench convicted, imposing a fine of £1, or ten days' imprisonment, ten days being allowed in which to pay the money.

ADULTERATED MILK.

At the Brentford Police-court on April 7th, before Sir G. S. Measom (in the chair) and Mr. G. H. Barber, Phillip Neall, a farmer, of Savernake, Wiltshire, was summoned for having consigned, under a contract, to Ealing, a quantity of milk which had been adulterated with 10 per cent. of added water.—Mr. W. Tyler, inspector of the Middlesex County Council under the Adulteration of Food and Drugs Act, said that on March 15th he went to the Ealing Great Western Railway Station and met the 12.20 train, from which several churns of milk were put out on to the platform. He took samples of milk from the churns, and submitted them to the public analyst, who certified that one contained 10 per cent. of added water.—Defendant, in defence, said he personally saw his cows milked and the churns placed in the train. The Railway Company did not permit consignors to lock churns of milk, and the adulteration must have taken place en route.—The defendant was fined 37s. 6d., including costs.

On the same day Thomas and Alfred Bodger, of the Isleworth Dairy, Isleworth, were summoned for having sold milk which had been deprived of 10 per cent. of its natural fat.—Mr. Ricketts appeared for the defence. Mr. Tyler stated that his assistant bought some new milk at the defendants' dairy, and on analysis the milk was found to lack 10 per cent. of the proper amount of fat which it should have contained.—In answer to Mr. Ricketts, witness added that he had previously taken a number of samples of defendants' milk, and the samples had in all previous cases proved satisfactory. Defendants told him that they obtained their milk from Mr. William Poupart, of Marsh Bank Farm, Twickenham. Witness had since taken a sample of Mr. Poupart's milk, and in respect of the quality of the article a summons was to be heard that day.—Mr. Ricketts said Mr. William Poupart was contracted to supply the defendants with new milk, and he (Mr. Ricketts) believed he could prove incontestably that the milk in reference to which the present proceedings were taken was sold by the defendants in exactly the same condition as they received it.—Evidence was heard for the defence, and at Mr. Ricketts' request the Bench, before deciding the case, heard a summons issued against Mr. William Poupart for having consigned to Messrs. Bodger milk which had been deprived of 20 per cent. of its natural fat.—Inspector Tyler stated that on March 15th he attended at Messrs. Bodger's business premises at Isleworth. He was present when two churns of milk were delivered from Mr. Poupart's dairy, and from the churns he took a pint of milk which was subsequently sent to the public analyst, who certified as regarding one that 20 per cent. of the fat had been extracted. Samples taken from the four other churns in the cart had also been examined, and found not to be adulterated or deteriorated.—In answer to Mr. S. Attenborough, who appeared for the defence, witness added that he had previously taken samples of Mr. Poupart's milk which had been found to be satisfactory.—Mr. E. J. Bevan, the public analyst for Middlesex, said the milk in question had originally been rich. The average percentage of fat in milk was about four; in the sample from Mr. Poupart's dairy there was only 2.4 per cent. of fat. If the churn had originally been filled with 50 quarts of new milk, but 10 quarts had been taken away and 10 quarts of skim milk substituted, that would produce a mixture of the character of the samples submitted to him.—Evidence was called for the defence to show that the milk from which the faulty sample was taken had not been mixed with skim milk, nor had any fat been abstracted from it. It was alleged that on the occasion when the samples were taken there was one churn of skim milk in the cart, but witnesses stated that there was no possibility of the new and skim milk being mixed by accident as they were kept in different parts of the dairy.—The defendant said he had implicit confidence in his men, and the matter was incomprehensible to him.—At the conclusion of the hearing, the Chairman said there would be convictions in both cases, but with nominal penalties of 10s. and costs.

ALUM IN BREAD.

At the Pontypridd Police-court on April 18th—before Mr. Ignatius Williams (stipendiary) and other magistrates—John Morgan, of Cilfynydd, was charged with selling to Superintendent Jones a currant loaf which, on analysis, was found to contain alum at the rate of 25 grains to a 4lb. loaf. Mr. James Phillips defended.—It will be remembered that the case was adjourned in order that the sample might also be analysed by the authorities at Somerset House. The authorities now wrote stating that the sample they received consisted only of outside parings and scrapings of the cake, and was not a representative sample of the article purchased as enjoined by Section 15 of the Sale of Food and Drugs Act. The weight of the reference sample was under 3oz., a quantity insufficient for the analysis of so complex an article of food as currant cake. The authorities, therefore, declined the analysis.—Mr. Phillips claimed that the summons should be dismissed on the ground that the county analyst had not complied with the requirements of the Act. He maintained that Dr. Morgan's certificate was informal, in that it did not give the specific quantity of alum in the sample analysed.—His Worship found that there had been informalities in the procedure, and dismissed the summons.

At Hastings on April 19th, James Smith was summoned for an offence under the Food and Drugs Act.—The town clerk appeared for the prosecution.—William Charles Inskip, inspector of nuisances, stated that on March 27th, at 11 a.m., he went to 2, Clarence-road, with his assistant King, to whom he gave certain instructions. Milk was purchased and divided, and one part handed to defendant's wife. Witness had since received a certificate from Mr. Cheshire to the effect that the milk was skim milk, and that 75 per cent. of fat had been extracted.—William King deposed to asking Mrs. Smith for a pint of new milk.—Defendant said the milk was sold as received.—The Mayor said this was the second time defendant had been there for such an offence. He would be fined 20s. and costs, or fourteen days.—A week allowed for payment.

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BOTTLING AGENCIES IN ALL PRINCIPAL TOWNS.

This Beer is SPECIALLY RECOMMENDED TO
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ADULTERATED BUTTER.

In the Birmingham Police-court, on April 20th, before Messrs. Fisher and Ryland, William Hamilton Skeats, of 229, Monument-road, was summoned for selling butter containing 85 per cent. of foreign fat. Thomas Davis, Inspector under the Food and Drugs Act, stated that on March 30th he visited the defendant's shop, and sent in a woman to purchase $\frac{1}{2}$ lb. of butter. She made the purchase, and then witness went in and informed the defendant that it was taken for the purpose of analysis. He divided the purchase, and left one portion with the defendant. He produced the public analyst's certificate, showing that the sample contained 85 per cent. of foreign fat. In cross-examination by Mr. Green, the witness said that the woman was served by an assistant, and the defendant was not present at the time. The defendant was present, however, when witness went into the shop.—Mr. Green, in defence, said that the fault lay with the assistant, who could have been made responsible had the summons been taken under the Margarine Act. There was no doubt that the assistant sold it, and did what was wrong, and he had been reprimanded.—Defendant was sworn, and said his assistant said that he had run short of pure butter. The rent of the shop was £26 a year, and he had been in business for about six months. There was no previous complaint against the defendant, but the magistrates said that it was a clear case of deliberate fraud on the public, and they were determined to put down such cases. They should make an example of all cases where they were satisfied, as they were in this case, that it was a deliberate fraud. Defendant would have to pay 80s. and costs.—Robert Rogers, 361, Monument-road, was summoned for a similar offence. In this case $\frac{1}{2}$ lb. of butter was purchased, and when a sample was submitted for analysis it was found to contain 90 per cent. of foreign fat. Defendant told the purchaser it was very good butter, and he sold a lot of it. He was fined 80s. and costs.—George Bagnall, 80, Hurst-street, was fined 80s. and costs for selling butter containing 80 per cent. of foreign fat, on the 4th inst. Defendant's excuse was that he fetched the butter from the cellar, and his eyesight being very bad he brought margarine by mistake.

LARD WARRANTY CASE.

WATKINS JONES, provision merchant, of Cardiff, was summoned at Pontypool on April 18th, under section 27 of the Sale of Food and Drugs Act, to answer a charge of having on February 7th last given to one James Lock a false warranty in writing in respect of a quantity of lard sold by him to Lock. It will be remembered that Lock was proceeded against for selling lard which upon analysis was found to contain 10 per cent. of beef fat or stearine. In his defence Lock produced a warranty given by the defendant, from whom he purchased the lard, declaring the lard to be genuine.—Mr. Allen, of the Glamorgan County Council, prosecutor, and Mr. Chas. Kenshole, Aberdare, was for the defence.—The warranty was admitted. But Mr. Kenshole now produced another warranty supplied to Mr. Jones, the present defendant, by Messrs. Walkington and Sons, of Belfast, the manufacturers who supplied him with the lard in question. Replying to this point Mr. Allen argued that the defendant being the wholesale dealer to whom the first warranty was traced, was not entitled to go behind that warranty, and claim the protection afforded by section 25, by producing another warranty supplied by the manufacturers. The section, Mr. Allen alleged, was never intended to protect one wholesale dealer against another.—The Stipendiary: It is difficult to conceive that an Act of Parliament should contemplate anything so absurd as to give protection to one man and deny it to another.—Mr. Kenshole produced the manufacturer's warranty, which took the form of a printed statement on the invoices that the lard referred to therein—the Lily Brand—was genuine.—Mr. Jones, the defendant, in his evidence, said he sold the lard in the condition in which he received it from the manufacturers.—Mr. Kenshole argued that the only person who could prosecute in this case, according to the construction of the Act, was their immediate purchaser; and further, that the

defendant was clearly entitled to protection under section 25.—A large number of points were argued, and cases cited on each side. Eventually his Worship intimated that he would give his decision that day month, it being understood that in the meantime a case from the North of England bearing upon the points raised would be decided in the Court of Appeal.

Another case on similar lines was heard at the same court, the defendant being Thomas Williams, a commercial traveller, representing the firm of Messrs. Pollman and Co., wholesale dealers, of Bristol, by whom the warranty was given.—Mr. Kenshole argued that the defendant was merely an agent in the matter. He had not given the warranty, and no offence could be charged against him. If proceedings were to be taken at all, then, Mr. Kenshole argued, the proceedings should have been against the Messrs. Pollman.—His Worship agreed, and the summons was dismissed.

A WARRANTY CASE.

At Southampton Borough Police-court on April 17th, Mary Juliet Austin, trading as the Southampton Dairy Company, at 74, High-street, Southampton, was charged with milk adulteration.—The town clerk (Mr. G. B. Nalder) appeared for the prosecution, and Mr. Lampert for the defence.—The inspector, William George Powell, gave evidence, prior to which Mr. Nalder urged that the offence was one of inhumanity, inasmuch as it was sold to a hospital, with 3 per cent. of its butter fat abstracted.—Mr. Lampert, on the other hand, submitted that a warranty had been received for this particular kind of milk, with all its cream, and that it had not been tampered with in the least degree by his client, and under section 25 of the Act under which these proceedings were taken he asked the magistrates to dismiss the case.—Mrs. Austin stated that the milk whilst in her possession was not tampered with. She only left the shop whilst the milk was there for ten minutes, but during that time no customers were on the premises.—In cross-examination she said she was in and out of the shop, but no one went near the churn or touched it.—Thomas Hampton, in the employ of the defendant, said he handed the sample to the inspector. The milk was given to him by the man Hickman, and nothing whatever was done to the milk whilst it was in his charge.—Cross-examined: Hickman was in the shop about half an hour before he took the milk away.—Frank Hickman said he measured up the milk and handed it to the last witness. No cream was abstracted from it, nor was it tampered with in any way.—Cross-examined: Mrs. Austin had two men in her employ—himself and the last witness.—George Cook said he took the milk from the station to the shop, and it was not tampered with in any way.—Mr. Hampton, a farmer, of Hursley, identified the ticket on the churn as sent by him.—The town clerk submitted that under a recent case the defendant had failed to prove, step by step, that the cream had not been abstracted, and it was not sufficient to merely give the evidence tendered that day.—Mr. Lampert replied that he had shown most conclusively that the milk was not tampered with.—The magistrates dismissed the information, and the town clerk asked whether the magistrates found as a fact that the milk was sold as delivered.—The Chairman said they did.—The town clerk asked that the ticket should be impounded, so that proceedings might be taken against the wholesale seller.—This was agreed to, and an application for costs declined.

THE VESTRYMAN AND THE INSPECTOR.

At a meeting of the Marylebone Vestry the Sanitary Committee presented a report upon the complaint of Mr. Marson, a general dealer and vestryman, that a sanitary inspector "knocked at his closed shop on a Sunday morning during the hours of Divine service for the purpose of obtaining a sample of milk, under the sale of Food and Drugs Act." The committee regretted that Mr. Marson had been inconvenienced, but exonerated the inspector from blame, and added that the shop "appeared to be open." Mr. G. Margerison, in moving the adoption of the report, which was carried, said that the committee thought it "most desirable" that their inspectors should visit shops during the hours of Divine service on Sunday when trading was being carried on.

THE EXPERIENCE OF THE MEDICAL

PROFESSION AND THE ANALYSES

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Contains the hæmoglobin of meat unaltered; that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession.

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Addressed to the **RESIDENT REPRESENTATIVE, William F. Horton.**

WHISKEY ADULTERATION AT PLYMOUTH.

At Plymouth Petty Sessions on April 16th, Jane Clatworthy, of the Nottingham Inn, was summoned for selling on March 19th, whiskey 39½ degrees under proof.—The town clerk (Mr. J. H. Ellis) prosecuted. Defendant was charged with having sold whiskey adulterated with water to a greater per cent. than was allowed. If it was proven that it was under 25 per cent the defendant would get off.—Sanitary Inspector Addiscott said he purchased at defendant's a pint of Scotch whiskey for 2s.—In answer to Mr. Trehane, for the defendant, he said the whiskey was taken from a shelf in the bar, but he could not say whether it was taken from an open bottle or glass barrel.—Mr. C. E. Bean, borough analyst, said the whiskey was 39½ degrees under proof. Witness described proof as an equal mixture of alcohol and water.—Cross-examined, he said whiskey in an uncorked bottle would lose its alcoholic power. It would, however, take some time to do so, according to the temperature of the room.—Defendant was called, and said she was not in the bar when the spirit was sold.—Mr. Trehane said he had been trying to get at the true facts of the case. If he was not allowed to make a statement, he was going to make a few remarks. Instead of the whiskey being 25 per cent. below, the whiskey was only 14½ degrees less than it ought to be, and it was an excellent thing that the whiskey should be adulterated with Plymouth's excellent water. (Laughter.) Defendant was not in the bar when the whiskey was sold, but the person who was there foolishly gave the name of the landlady.—A fine of £10, including costs, was inflicted.

Joseph Hammersley, of the Abbey Hotel, St. Andrew's-street, was summoned for having sold adulterated whiskey. Mr. T. H. Geake defended.—Inspector Addiscott purchased a pint of whiskey for 2s., and the borough analyst certified it was 35½ degrees under proof, which represented 15 per cent. of added water.—In answer to Mr. Geake, witness said if the whiskey had been in a barrel for a considerable period the whiskey would be likely to get gradually more under proof. The same would happen to whiskey in a bottle. Defendant stated that he had a very small demand for Scotch whiskey, not having purchased any since February, 1892, when he bought 13½ gallons, of which he had about one-half left. The whiskey supplied to Mr. Addiscott was taken from a jar and decanter, filled from the cask a considerable time ago.—William Henry Bloye deposed to having examined the whiskey in the barrel on Saturday last, and finding it 27 below proof.—Mr. Geake contended that defendant was only guilty of a technical offence and of carelessness, but of no intent to fraudulently deceive the public.—Fined £8 and costs.

SUPPRESSING MILK ADULTERATION IN BATTERSEA.

At South-west London on April 18th, Thomas Farrow, of 63, Latchmere-road, Battersea, was summoned, before Mr. Denman, at the instance of the Vestry of St. Mary, Battersea, for selling milk adulterated with 20 per cent. of added water.—Mr. W. W. Young supported the summons, and Mr. Warburton, barrister, appeared for the defendant, who said he had no knowledge of the adulteration. He called a man named John Smith, who was in the employment of the defendant. He said the defendant tested the milk every morning. The witness took the milk on the rounds and left his barrow unattended. On one occasion he noticed that the taps had been turned on.—Mr. Young: Do you suggest that water was added to the milk in your absence?—Mr. Denman: That would be no defence, as it was selling to the prejudice of the purchaser.—Mr. Warburton concurred, and maintained that it would go in mitigation.—There was a previous conviction against the defendant, and Mr. Denman imposed a penalty of £5, with 12s. 6d. costs.—Mrs. Mary Stone, of 27, Falcon-road, was summoned for a similar offence.—The adulteration was similar to the last, and two previous convictions having been proved against the defendant, a penalty of £5 was imposed.—Alexander Harris, of 2, Tennyson-street, Battersea, was summoned for selling milk from which 5 per cent. of the original fat had been abstracted without notifying the fact to the purchaser.—Mr. Denman held that it was necessary for the vestry to prove that the defendant sold the milk as pure milk, free from abstraction or adulteration.—Mr. Young argued to the contrary, and drew attention to the certificate of the analyst, which proved the abstraction of the cream.—The summons was adjourned for Mr. Young to argue the case.—Nathaniel Poulton, of 30, Falcon-road, was fined 40s. for selling milk adulterated with 12 per cent. of added water.

RAPESEED OIL OR OLIVE OIL?

EDWARD BAYNES, druggist, of Parliament-street, York, was summoned for selling to a purchaser a drug not of the nature and quality demanded. On March 8th, Mr. J. Atkinson, inspector under the Food and Drugs Act, went to the shop of Baynes, Limited, Parliament-street, and there asked defendant for a pound of olive oil, and asked the price. Defendant gave him a price, and witness then asked if he had any cheaper. Defendant said he had some olive oil at 10d. a pint, and witness asked for a pint, for which he handed a pitcher to defendant. On receiving the oil, the inspector told Mr. Baynes that he was an inspector under the Food and Drugs Act. He then divided the oil into three parts, giving one to Mr. Baynes, keeping one for himself, and sending the other to the public analyst. The certificate of the analyst showed that the oil sold as olive oil was rapeseed oil.—Defendant was fined 20s. and costs.

WORTHING.

THIS borough is now supplied with water from new Tube Wells a mile north of the town, and the water is excellent. It has been examined and certified to be of an exceptionally pure character by Dr. Klein. The eminent engineer, Mr. Mansergh, has been given a free hand to make any improvements; he considers necessary in the drainage of the town, and the whole of his recommendations are being carried out.

In point of health, Worthing is now in the front rank. Dr. C. Kelly, medical officer of Health, reports that during the quarter ending March 31st, 1894, there was no death from fever, nor, indeed, from any notifiable disease. The health of the district was in a most satisfactory condition. The death-rate was equal to an annual rate of 13.0 per 1,000. In England and Wales the mean mortality for the corresponding period was 21.7 per 1,000 in the ten years 1884-93.

We congratulate the authorities on so excellent a state of things as they have now brought about, and hope Worthing will receive again its fair share of public support as a charming and safe health resort.

£10,000 PRIZE FOR AN IMPROVED SYSTEM OF STREET CAR PROPULSION.

THE Metropolitan Traction Company, of New York, make the very liberal offer of 50,000 dol. to the inventor who will submit the best system of street car propulsion, not a trolley or cable, but equally effective and economical. The decision of the award they leave to the Railway Commissioners.

ALKALI POLLUTIONS OF THE MERSEY.

Queen's Bench division. (Before Lord Coleridge, Lord Chief Justice, Mr. Justice Wright, and Mr. Justice Kennedy.) The United Alkali Company v. Simpson.

THE Court, as above constituted, sat to take the above-named case on account of its importance. It was a case stated by justices of Lancashire on an information at the Widnes Petty Sessions, in the division of Prescott, Lancashire, preferred by Simpson against the Company under the 11th section of an Act to protect navigable waters (51 Geo. III., c. 159), charging that the Company in May, 1893, at West Bank, Widnes, caused to be cast alkali waste in a place on shore near their chemical manufacturing works, where the same was liable to be washed into the river Mersey by floods or tides, contrary to the statute. Upon this information the Company was convicted and fined, and so on two other similar informations. But the magistrates stated a case for the opinion of this Court, which now came on to be heard and argued. The informations were laid by Simpson, on behalf of the acting conservator of the Commissioners for the Conservancy of the river Mersey. The Company at their works carry on the business of alkali manufacturers, and in the course of such manufacture a refuse or waste is produced known as alkali waste. This waste product, to the extent of many thousand tons in the year, was formerly placed in heaps or mounds on the nearest vacant space; but the Company, partly to prevent the necessity for depositing the alkali waste and partly to utilise it by extracting the sulphur from it, have lately put in use at their works, in the course of their manufacture there, a certain chemical process known to the trade as the "chance process"; and they have also there treated by the same process quantities of alkali waste procured from other works of the Company, and brought to the works for that purpose. The "chance process" is a method of treating alkali waste (after it has been mixed with water) with carbonic acid gas, whereby sulphuretted hydrogen gas is evolved in close tanks, and utilised for the production of sulphur, and the residue is left in the tanks in the form of a liquid containing in suspension solid matters in a finely divided state, which, when deposited, form a mud which is known in the trade as "chance mud." The solid matters in this residue consist of about 87 per cent. of carbonate of lime in a very finely divided condition, and about 13 per cent. of other substances in a similar condition. These solid matters were kept in suspension in the water while in the tanks by means of agitators revolving slowly inside the tanks. On May 16th, 1893, and for some time past the Company discharged this residue from the tanks through four pipes, which carried it into sewers belonging to the works, where it would mix with other drainage of the works, and by means of these sewers it was discharged into a natural brook, known as the Marsh Brook (not the property of the Company), at a point about 500 yards above where the brook falls into the river Mersey. The solid matter thus discharged in each week would have weighed about 567 tons. The brook sewer serves as a drain to a number of other works and manufacturing factories and to carry away surface water from a considerable district. The brook is tidal up to and beyond the point where the sewers from the works discharge into the brook. It was proved, and found as a fact, that part of the solid matter thus discharged from the works into the brook became deposited in the brook from the point of the outfall of the sewers into the brook downwards; and that the remainder of the solid matter was carried down the brook and into the river Mersey by the tide or by other water flowing down the brook; and, further, that part of the solid matter carried in suspension was deposited on the shore of the Mersey near the outfall of the brook between high and low water marks. The enactment applicable is that "if any person working any quarry, mine, or pit near to the sea or a river, or if any person shall cast from the shore any earth, rubbish, or filth into any port, harbour, or navigable river so as to tend to the injury or obstruction of the navigation, such person shall forfeit," etc. The question was whether the conviction of the company was warranted under this enactment. On the part of the company it was contended that it was not, on the grounds—(1) that the company are not "persons" within the enactment; (2) that the stuff discharged was not "earth, rubbish, or filth" within the enactment; (3) that the evidence did not disclose any case of casting or throwing on shore where it was liable to be washed into the sea or any navigable river, as it was proved that the point at which the stuff was discharged into the brook was about 500 yards above where the brook falls into the Mersey; (4) that the acts complained of do not constitute an offence under the enactment unless it be shown that such acts were committed "so as to tend to the obstruction of the navigation of the river," and that the conservators had not alleged nor proved any obstruction to the navigation. The magistrates, however, being of opinion that the objections raised were not good in law, convicted the company, who upon the case thus stated now appealed.

Mr. Joseph Walton, Q.C. (with Mr. Deacon), appeared for the company and argued on their behalf, citing on the first point "The Queen v. Clewer" (4 Best and Smith), as showing that the company were not included within the terms used. The words used did not include chemical deposits. Neither "rubbish" nor "filth" would be applicable to such deposits. Fine deposits such as this stuff in suspension in water cannot be called "earth" or "rubbish." [Lord Coleridge.—Is it not "filth"?] No, for it is not said to be offensive. The Legislature did not intend to interfere with chemical or manufacturing processes, and thus to interfere with industrial enterprise. If this conviction be supported, it will affect all works or factories near any brook which discharges into a navigable river, though there really no danger of obstruction to the navigation. The object of the Act is to protect navigation, and the plain natural meaning of the words is to do so.

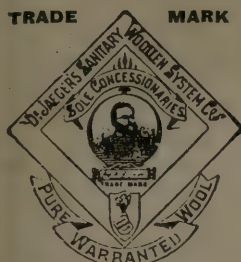
Sir H. James (with Mr. Carver) appeared for the conservators in support of the conviction. Surely, he said, this company was within the Act? And surely this sediment was "rubbish" or "filth"? [The Court intimated that they agreed on both points.] Then the only remaining point is the question whether it is necessary to show that the deposit of the sediment tended to obstruct the navigation. Can it be doubted that in fact the throwing of about 600 tons a week into the river must have that effect? But that is not a necessary part of the offence, which is throwing it in.

The Lord Chief Justice delivered judgment to the effect that the conviction was right, and that it was not necessary to show a tendency to obstruct the navigation. It was an offence to deposit the sediment in such places that it might be washed into the sea or the river. The other Judges concurred. Appeal dismissed, with costs.

WHAT appears to be a very useful invention has been patented by Mr. John R. Rogers, the well-known theatrical manager. The number of accidents that occur to riders in hansom cabs, by horses falling, or suddenly stopping, and thereby jerking the hansom's occupant "out o'winder," the dangers of the glass front and the mud deposited by the wheels upon persons entering our "street gondolas," have attracted Mr. Rogers' attention. He claims to have devised a means whereby the occupant of a hansom cannot be thrown out, by which the glass front window can be done away with, and yet permit of the passengers being protected from rain or sun, and that ladies' dresses are protected from coming in contact with the wheels when entering or leaving the vehicle. The patents are numbered 6,725, 6,726, and 6,900 respectively.

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Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands Neuralgic and Rheumatic Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat Colds, and Skin Ailments quickly relieved by use of

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Samples sent Free by Post on receipt of value.

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Food and Sanitation.

SATURDAY, MAY 5TH, 1894.

THE ADULTERATION ACTS.

In another part of our journal we publish a report of an interview which a deputation of Members of Parliament have had with Mr. Shaw-Lefevre at the Local Government Board respecting adulteration. It is fortunate that the deputation had at least one Member of Parliament who had a practical knowledge of the question, in addition to the theorists, such as Mr. Channing, Mr. Smith Barry, the Hon. Horace Plunkett, and others. Mr. Kearley, who is one of the largest dealers in food stuffs in the kingdom, is aware of what appeared to be lost sight of by these theorists—that the question of adulteration is a very much wider one than the Central and Associated Chambers of Agriculture imagine it to be.

Indeed, were we to believe the Central and Associated Chambers of Agriculture spokesmen, the only point in adulteration worth taking note of is that of dairy produce. This is, as we have repeatedly shown, arrant nonsense, and indicates that its utterers know really nothing of the question. Heavily as agriculture has been injured by the adulteration of dairy produce, it is safe to say that it has been injured to as great or even a larger extent by the adulterations of beer and spirits, the pernicious effects of which we have repeatedly exposed, but which, curiously enough, the Central and Associated Chambers of Agriculture spokesmen are all at sea about. The grocery trade is the victim of adulteration in innumerable forms, all of which seriously affect the pockets of consumers of food stuffs.

The anomalies in the law, the stultification of the Acts by idle or interested local authorities, the ridiculous penalties inflicted by magistrates in cases of grave frauds, the manner in which retailers are punished for swindles cunningly contrived by manufacturers, and against which the retailers have no means of protecting themselves—the whole system of taking samples and of analysis, and the need for a really expert board of analysts to whom to refer disputed samples, are all much more important to the trade and the well-being of the country than the comparatively small question raised by Mr. Channing, of the Central and Associated Chambers of Agriculture, and we are pleased to see that Mr. Shaw-Lefevre recognises this. An inquiry into the working of the Food and Drugs Acts is urgently needed. As an instance of this, we may state that our own examinations show that proper enforcement of the Acts would save the public of London some £800,000 per annum now filched from them in milk adulteration alone by methods of which the Central and Associated Chambers are entirely unaware, and we have

no doubt that the evidence that could be produced as to the character and extent of present day adulteration would, as Mr. Kearley said, "simply stagger everybody who has only a slight knowledge of the question."

We trust that the outcome of Mr. Shaw-Lefevre's consultation with his colleagues of the Board of Trade and Board of Agriculture will be the immediate appointment of a committee to inquire into the whole question of adulteration, the working of the Food and Drugs Acts, the Margarine Act, the Merchandise Marks Act, and also the Fertiliser and Feeding Stuffs Act. With regard to this latter Act, as we pointed out when Parliament wasted its time in the passing of it, its drafting was such that it was bound to be a farce and a dead letter. Our advices from different parts of the country now show this to be the case, and confirm us in the belief that the only effectual method of grappling with adulteration is to have independent inspectors, removable from point to point, as the Excise officers now are, taking samples regularly of all kinds of articles in every part of the kingdom; that these inspectors should be entirely free from the control of local authorities; and that, at least, not less than one sample per annum for every 500 of the population should be taken; that these should comprise every article of food, and not be, as is at present generally the case, representing a very few articles. As is now the rule with Excise prosecutions, if prosecutions were brought before magistrates by officials such as we suggest, the Nipkinses would have no opportunity of making themselves ridiculous by the infliction of shilling penalties, as Sir John Bridge did last week in two most flagrant cases of the sale of margarine as butter by restaurant keepers. But, above all, and as a matter of justice to manufacturers and to wholesale and retail dealers, we require a society for scientific research into foods and adulterations. The present go-as-you-please system is neither just to the analysts nor to the persons prosecuted.

PROFESSOR CHANDLER AND BUTTER SUBSTITUTES.

PROFESSOR CHANDLER says:—"For years the poor of this State have been eating rancid butter. Good butter is obtainable in few places. Those who can afford to pay 40, 50, and 75 cents a pound can secure choice butter made of good cream and in a cleanly manner; but very few in the community can afford such a luxury. The others have had to take the butters mixed or doctored of the butter dealer, which is often dirty and unwholesome.

"Well, then comes the invention of artificial butter. Human beings crave fat, and want something to spread upon their bread. The artificial butter is made of beef suet. Nobody ever said suet was not wholesome. That made oleo-margarine. It was made mechanically, in a clean and appetising manner.

"After this combination had been made for some time another was tried. This was of beef suet and refined cotton-seed oil. The latter is eaten by all of us on salad as olive oil. There is no reason in the world why cotton-seed oil is not just as good as olive oil. Some people seem to think it is not as good, because it came later and is cheaper. That sort of reason does not appeal to me. The cry against artificial butter comes from men who think that they can control the farmers' votes by making it. It is like the ancient British legislators and the wood farmers. If the farmers only knew it, they will suffer nothing by the free admission into the market of artificial butter, for there are other directions in which they can produce equally good results, and they will make good butter instead of bad. There is no reason why their farms will not produce for them as good returns in other lines as by devoting them to the making of bad butter. Those farmers who can produce choice butter need have no fear of competition, and the others had better abandon the dairy business.

"Not a single chemist of standing in the profession has uttered a word against artificial butter. There are a few third-rate chemists employed by the Dairy Commission, who have made statements to the effect that artificial butter is not wholesome. It is easy enough to see why they should do that. All the big chemists of this country and Europe have pronounced in favour of artificial butter. When I was president of the Health Board of this city I investigated oleo-margarine and butterine very carefully, and would have stopped their manufacture at once had I not found that they were perfectly wholesome. On the contrary, I found them much better than the poor, cheap butter which was sold in most places, and which became rancid in a very short time. I also called the attention of other chemists to the new invention and secured their opinions."

MILK FROM THE COW AT YOUR OWN DOOR.

At Forest Gate, a suburban district on the east side of London, a small dairy proprietor, instead of taking his milk round in the ordinary milk-cart, brings his cows to his customer's door. Beyond the necessary milking tin and measuring vessels, there is nothing to hinder the actual taking of the milk "from the cow," and putting it into the jugs of the customers. The milk in appearance is thinner, and not so creamy as that usually sold, but if used for a milk pudding it is beautifully consistent, and shows no water at the bottom of the dish. The milk is sold at threepence per quart, a penny cheaper than that of other dairymen. The "herd" at present consists of three cows. Whilst the method may have its objections, it certainly has its advantages. Milk direct from the cow, and the fact that customers can see for themselves that the cows are healthy and clean, decidedly influences the sale of the milk.

DIGESTION OF LIVING TISSUE.

NUMEROUS experiments have been carried out in the past with a view to answering the oft-proposed question, "Why does not the stomach digest itself during life?" It is well known that the ear of a living rabbit, or the leg of a living frog, introduced through a gastric fistula into the stomach of a dog, will be digested. These facts have led to the conclusion that living tissues are, as a rule, unable to resist the action of the gastric juice. There are some reasons, however, for believing that in each of these cases the tissue undergoes some change—a local death, it may be—prior to its digestion.

Recently, some experiments have been published which are interesting as bearing upon this subject, though they do not afford any answer to the question originally proposed. It has been shown by Viola and Gaspari that very vascular tissues resist digestion for a long time, provided the circulation is maintained intact. In dogs and cats, these investigators found that after introducing the spleen into the stomach, the former would resist digestion for twelve to sixty-four hours. This was as long a period as the animals operated upon could be kept alive. They succumbed to acute peritonitis and became incapable of carrying on their digestive functions properly.

Recognising in this fact a serious objection, M. Ch. Contejean has modified the preceding experiments by introducing a loop of intestine in such a way as to allow of successful sutures, and prevent the permeation of intestinal fluid into the peritoneal cavity. The operation was performed upon a dog as follows: an incision of a finger's length was made into the stomach in the region of the fundus, parallel to the attachment of the great omentum, and for an equal distance across this organ. Through this opening the terminal portion of the duodenum was introduced into the stomach, the insertion of the mesentery alone being left outside. The intestine was fixed in this position by a Czerny suture. Seventy to eighty stitches were taken. The stomach wound, along the *linea alba*, was closed by a suture at three places.

The day after the operation the animal received neither food nor drink. On the following day and those succeeding the usual rations were given twice each day. The wound healed by first intention. The dog was killed at the end of eleven days, having digested nineteen abundant meals since the beginning of the experiment. Post-mortem examination showed no perforation whatsoever of the intra-gastric intestinal hernia; the portion bathed by the gastric juice, however, was the seat of marked desquamation, and it seemed to show an incipient ulceration over a very limited area. The adhesion between the stomach and intestine was very firm, and the sutures were well encysted.

The above experiment then shows that living tissues not covered by any special epithelium have the power, under certain conditions, to resist the action of the gastric juice for a very long period.—*Dietetic and Hygienic Gazette*.

A WATER LABORATORY.

ONE of the last official acts of Sir Charles Russell as Attorney-General was to sanction the sum of £25,000, the residue of a legacy of the late Mr. Richard Berridge, being given, in trust, to the British Institute of Preventive Medicine for the endowment of a laboratory devoted to the bacteriological and chemical examination of our water supplies, with special reference to the discovery of the best means of preventing the transmission of disease through water. A large laboratory is now in course of erection for this purpose on the site secured by the institute at Chelsea.

CHEMISTRY OF THE BAKED POTATO.

USUALLY the first vegetable prescribed by the physician for the sick person who is beginning to use solids is a baked potato. A baked potato, however, may be no better than a boiled one unless it be done in so high a temperature that the starch is affected. Boiled potatoes cannot be subjected to a higher temperature than 212 deg. Fah. Baked potatoes may be done in such a way that they are but a little better than boiled—for instance, done in a slow oven. On the other hand, if they are put into temperature of 380 or 400 deg. Fah., or what is called a "hot oven," they will be done in such a manner that the conversion of starch will in a degree take place, and the potato be consequently palatable and easily digested. Potatoes roasted in hot ashes or embers are delicious, and for the same reason. The high degree of heat cooks the starch properly.

POTATO WINE.

ABOUT six years ago attention was called to the fact that an attempt was being made by an ingenious English chemist to manufacture so-called wine from the ordinary potato. That the project did not receive the amount of success that its designer anticipated may be inferred from the silence that has since reigned as to its merits. We now hear, says an English exchange, that the mantle of the aforesaid inventor has fallen upon the shoulders of a Frenchman named Moutine, who claims to have found out a process by which a pleasant beverage, of a wine character, can be made out of a combination of malt and potatoes, the cost of which only reaches the modest price of 11s. 2d. per gallon. We regret that we have not yet had an opportunity of tasting the seductive fluid in question, and, therefore, are unable to give an opinion as to whether or not it is dear at the price. Nevertheless, we have been favoured by a correspondent with the receipt for its manufacture, and this we place at the disposal of our readers.

"First grind the potato and then press it well to remove every drop of water, by which means other substances, which might infuse a bitter taste to the beverage are also got rid of. The remaining starch, in combination with malt, produces grape-sugar. The must, secured by the reaction of the malt, is filtered and transferred by stream and high pressure to a special boiling apparatus invented by Moutine, and used by him for the fermentation of all beverages. The temperature is raised under pressure to 130 to 150 degrees, and kills all fermenting matters; the albumen coagulates, and the grape-sugar becomes a kind of caramel, which gives an agreeable taste to the drink. The boiling process at five to six atmospheres finished, the temperature is reduced to 25 degrees, and the fermentation is produced by lees of wine."

Should this beverage eventually come into consumption among the peasantry of France, it will afford one more shock to the delicate susceptibilities of Sir Wilfred Lawson and Co., who will henceforth have to regard the potato and vine with equal aversion. —*The Pharmaceutical Era.*

PROPOSED GOVERNMENT INQUIRY INTO ADULTERATION.

AT the Local Government Board on April 30th, Mr. Shaw Lefevre (who was accompanied by Sir Hugh Owen) received a deputation of Members of Parliament on the subject of a further inquiry into the Acts relating to food adulteration. The deputation consisted of Mr. Channing, Mr. Fellowes, Mr. Hayden, Mr. W. Johnston, Mr. Kearley, Mr. Lambert, Mr. P. J. Power, Mr. Horace Plunkett, Mr. Smith-Barry, and Col. Warde.

Mr. Channing, in introducing the deputation, said it had sprung from a decision of the Parliamentary Committee of the Central and Associated Chambers of Agriculture. Their object was to ask for an inquiry into not only the general subject of the fraudulent sale of butter substitutes, but the whole question of the adulteration of dairy produce. They were the spokesmen of a branch of British agriculture which, on the whole, was most promising of reasonable success in these times of difficulty, but which was specially hampered and hindered by various forms of adulteration. The Margarine Act had, in practice, proved a failure, and the opinion of representative practical agriculturists was that there should be some further inquiry with a view to amendment.

Mr. Horace Plunkett said he had introduced a Bill on the subject into the House, but he saw no possibility of anything being done by means of private Bill legislation.

Mr. Kearley said he had direct evidence that butter adulteration was going on in the most flagrant manner in France, Belgium, Italy, and Holland.

Mr. P. J. Power said the poor in our large towns were paying the price of good butter for butterine which, in point of fact, was not worth half the value of butter.

Mr. Shaw-Lefevre, in reply, said,—I think it is impossible to deny that there is a general desire that there should be some inquiry into the working of the Sale of Food and Drugs Act, and also the Margarine Act of 1887. The only question is what kind

of inquiry should be held into these matters. The facts laid before me to-day seem to indicate that there may have been negligence on the part of officials of the Board of Trade in the carrying out of the Margarine Act, and the question that arises is—should this be dealt with by a departmental committee? It appears rather to point to the expediency of having a committee of the House of Commons, which would range over a rather wider expanse and deal with what is really very contentious matter in a more open and public manner than any departmental inquiry could undertake. With regard to the import of margarine, the figures that I have show that the importation of margarine has increased from 870,000 cwt. in 1886 to 1,200,000 cwt. in 1889, whereas the quantity of butter is 1,480,000 cwt. in 1886 and 2,000,000 cwt. in 1891. These figures tend to show that the importation of what ostensibly is margarine is now rather more than half the quantity of butter, and therefore it would tend to show that the Act has not been without avail altogether in respect of the importation of margarine. It has been worth while to the importers to declare a substance as margarine rather than to palm it off as butter. Of course it may be that a considerable quantity of butter is adulterated with margarine, and is imported as pure butter, whereas it ought to be described as a mixed substance of butter and margarine; but it is also perfectly clear that a very large quantity of margarine is imported as such. What happens to it when it is imported. Whether it comes into the consumption of the country in the form of butter, it is impossible to say; but the probability is that there may be considerable grounds for the statements which have been made to-day. The question really is whether an inquiry of this kind had better be held by a committee of the House of Commons or by a departmental committee. The matter is a highly contentious one, and there is a great deal, I have no doubt, that could be said on the part of the grocers and vendors of these articles in the opposite direction. My present impression rather is that a departmental inquiry would hardly be of sufficient importance to deal with the thing, and that it might be better dealt with by a committee of the House of Commons. However, this is a matter which affects two other departments, the Board of Trade and the Agricultural Department. All I can say is that I will consult my colleagues of those two departments, and I will consider with them what is the best form of inquiry, and I will let you know further on the subject. I may say that you have opened up a larger question than the adulteration of butter by margarine, because you have intimated a desire that the whole question of adulteration of dairy produce should be considered by a committee of that kind. That raises a number of very important and difficult questions. It raises, also, questions as to the administration of the Sale of Food and Drugs Act by the local authorities. However, I will consider the whole question in consultation with my colleagues, and let you know the result.

Mr. Lambert, Mr. Power, and Mr. Kearley all urged that this matter ought to be dealt with as early as possible, Mr. Kearley stating that the evidence which could be produced from all quarters would simply stagger everybody who had only a slight knowledge of the question.

The deputation then withdrew.

SELLING MARGARINE AS BUTTER.—Patrick Farrelly, grocer and provision merchant, 44 and 46, Anderson-street, Partick, was convicted at Glasgow Sheriff Summary Court on April 20th, of having, on the 21st. March, sold to a girl half a pound of butter which contained 96 per cent. of fatty matter not derived from milk. The girl was sent to make the purchase on behalf of Mr. David Willock, sanitary inspector of Partick. Sheriff Birnie, in imposing a fine of £5, with the option of seven days' imprisonment, said that the respondent had been clearly trying to sell margarine as butter. It was one of the worst cases he had come across for a long time.

WILLIAM CHAPMAN, grocer and provision merchant, 385, Dumbarton-road, admitted having exposed margarine for sale without the necessary label. The Sheriff ordered him to pay £1 15s., being the expenses incurred by the prosecutor, Mr. David Willock, sanitary inspector of Partick.

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For Infants
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CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE
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POISONOUS ANALINE COLOURS IN CONFECTIONERY.

THE London correspondent of an American confectioner's journal writes as below :—

There is a big outcry here just now against the use of aniline colours in confectionery. It is alleged, and with some considerable show of reason, that they are unsafe to amalgamate with food-stuffs. A colour manufacturer told me the other day that a short time ago a lad in the employ of a candy-maker vomited seriously after eating a few candies which his master had tinted with coal-tar products. The colouring agents were taken to a government analyst, who at once pronounced them poison, and expressed a wish to prosecute everyone who used them. Fortunately, the consensus of opinion here is greatly in favour of vegetable extracts. All reputable firms handle them, or, at least say they do, although I have a suspicion that this is not the whole truth.

In order to set the matter at rest, I interviewed an authority on anilines. His name is Mr. Arthur Morris, and he is London editor of the *Dyer*. Morris is an out-and-out Bohemian, but he knows his subject down to the ground. I found him buried in books of every description—French, German, Spanish, and English. His library is a large one, and he makes a point of collecting everything which appears in print anent colours. Whilst admitting that several well-known coal-tar products were unfitted to be assimilated with food, Mr. Morris pointed out, *au contraire* that dozens of them could be swallowed with impunity by the youngest babe. "Still, for all that," he said, "if I were a candy-maker I should not use them. The public are dead against taffies coloured with anilines, and it is useless to combat popular prejudice. To give you an idea, though, how absurd much of this prejudice is, I may mention that at a certain colour manufactory in Switzerland a workman was employed in doing nothing but sifting anilines. During that time he never on any occasion experienced the least ill-effect from the occupation, although it is computed that he must have swallowed on an average about two grains of the 'poison' daily." And Mr. Morris laughed immoderately. I expostulated. Surely, I remarked, there is some truth in the statements that various cases of blood poisoning have arisen through the use of garments dyed with anilines. "No; I think not," he replied, reflectively. "The chances are a hundred to one that the colour had nothing to do with it. My own experience is that blood poisoning is due to the use of loose mordants—the agents employed in fixing the anilines to the fibre." And with this the interviewed one hinted that the conversation must cease.

Popular prejudice, perhaps, is the crux of the whole question. Consumers of sweetmeats, rightly or wrongly, look with suspicion upon all candies in which coal-tar products are employed. Why, then, should manufacturers continue to use them? There are plenty of substitutes. Vegetable products are pure and wholesome. They are also cheap, brilliant, and fast. What more is required?

A HUMAN OSTRICH.

MR. WYNNE E. BAXTER held an inquest at the London Hospital last week with reference to the death of Owen Williams, aged 42, of no occupation, lately residing at a common lodging-house in Brick-lane, Spitalfields. Mary M'Auliffe, deputy of the lodging-house, deposed that the deceased had resided there, on and off, for seven years.—The Coroner: How did he get his living?—Witness: He used to go out at night to the public-houses and amuse the people by eating bottles and all kinds of things. I have seen him do it myself. I have known him to eat bread and cheese and pickles, and after that the saucer. That's quite right, sir. I had a little new pail to fill the copper with, and he said if I would give him a shilling he would eat that, I was very wild at that.—The Coroner: I wonder what he would have charged to eat an elephant.—Witness: He was not well the last three days.—The Coroner: Taken something to disagree with him, perhaps? Did he drink as well as eat?—Witness: He never came home sober. Witness added that she gave him an order for the infirmary on Monday last, and he left the house to go there at 10.30 a.m. Walter Williams, porter at the Whitechapel Infirmary, said that the deceased walked in there at twenty minutes to 1 o'clock, apparently very ill. At midnight he was taken over to the London Hospital.—Dr. L. G. Hill, house surgeon, stated that the deceased was suffering from an obstruction of the intestines, and an operation was performed, but death ensued on Tuesday evening. In the intestines witness found 25 pieces of cork, 20 pieces of tinfoil, a leaden bullet, a piece of string 18in. long, with corks attached, eightpence in bronze, a piece of leather 9in. long with a hook

attached to each end, several pipe stems and portions of 'news-paper. A piece of tinfoil and one of the hooks had perforated the intestines and set up peritonitis, which ended in death. Deceased told witness that he was very hard up and took to that mode of living in order to get money. He gave witness a long list of the articles which he used to swallow, amongst them being chains, sovereign purses, French coins, halfpence, etc. The jury returned the following verdict :—"That the deceased died from peritonitis following perforation of the bowels, caused by a piece of tinfoil and a hook, which, with other indigestible things, he had swallowed for a reward, such death being due to misadventure."

TEMPERANCE BEERS.

THE following warning has been sent by Dr. W. R. D. Blackwood to the *American Medical Summary* anent the sarsaparilla, dandelion, etc., class of beer substitutes so largely sold. "In hot weather all of us naturally take to liquid refrigerating agents, and some are in favour of one thing, while others prefer something else. For several years past the community has been beseeched to deal in 'root beer' under various alluring promises, and after the originator of this decoction got confidence established, numerous imitators jumped his claim (whoever the first fellow was). How many kinds of 'extracts' for the manufacture of this stuff there may be in the market I don't know; there are too many for the public good. Composed as most of them which I have seen are, sassafras predominates, with a flavouring of winter-green or some allied material, the whole being a vapid imitation of fluid extract of sarsaparilla. To a certain quantity of this base the manufacturer is told to add a large quantity of water, and to start fermentation a cake of compressed yeast is mixed up with the mess. After standing awhile it is to be bottled, and the container well corked; if ordinary bottles are used, then the corks are tied down with strings till wanted for consumption (or colic, correctly speaking). Most dwellers in cities, however, get away with some of the bottles belonging to the lager-beer man, because the stoppers are easily manipulated, and corks are done away with in this method. Now, when the mixture is corked up, fermentation has not been completed as in good beers or ales, hence when the bottle is opened a vigorous effervescence ensues, which is taken by the man or woman who is 'setting 'em up' as a big thing in the way of home-made beverages. It is not just this, however, but something not quite so alluring or harmless; why? Well, in the first place, fermentation goes on in the unfortunate swallowers' stomach after the mess is swallowed, and if the carbonic acid gas don't all come up in a manner more useful than polite, there is going to be trouble, and many folks wonder what made them so much troubled with borborygmi all night, and what was the cause of so much pyrosis. Next comes the secondary effect; the tannin in the barks and roots is apt to set up constipation in many persons, with a consequent act of diarrhoea after awhile, and here again the subject wonders what gave him so much looseness when he had been taking hardly any ice water at all!

"For several seasons past I have had a large number of cases of indigestion, due to this soaking of families with this wretched slush, and I have stopped the trouble in all of them by simply letting them know what the *fons et origi mali* was. (It also stopped a lot of professional visits for myself.) As the editor wants me to give him some copy to fill up a corner, I don't know that I can do better than warn my friends of the trouble this prevalent beverage is causing amongst all classes of the community, but more particularly to those whose scruples forbid the drinking of good beer, and who, in lieu of something thicker than water, take to this specious humbug. I don't suppose the pedlars of the extract will admire what I have to say about their wares, but after calling attention to the matter amongst a number of my patients and fellow practitioners, they have found by experience that the thing was more serious than it looked to be at first sight, and many a family that used to fill up the refrigerator with bottles of root beer now stick to lemonade, raspberry vinegar, or something of the kind, when they don't drink either water or a good article of beer from a reputable brewery. See here, my readers! I am not trying to puff lager—not at all! it is good in its place; my object is to call attention to something which has been doing very much harm under a plausible advertising dodge, and which is going to cause more, unless people get out of the notion altogether too prevalent that their blood needs purifying in hot weather, and that such trash as this root beer is the remedy to be applied. Drop it."

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"LI-VER" Brand of Lard.

VALUE OF GELATINE AND GELATINOUS FOODS.

ALTHOUGH gelatine is an albumenoid, rich in nitrogen, and in many ways related to albumen, it cannot take the place of the latter in a normal diet. It is, however, a natural ally and companion of proteid matter, and when administered with the latter as a part of the daily food nitrogenous equilibrium is established with a smaller quantity of proteid than when the latter food is taken alone. If, on the other hand, gelatine or gelatinous foods only are fed, then death speedily follows from nitrogen starvation. This condition of things is certainly very suggestive, as showing the need of animal organism for a certain form of nitrogen—a need which can be wholly supplied only by proteid matter. One reason why gelatine cannot take the place of albumen in repairing the waste of the tissues is to be found in its rapid and complete transformation within the body into katabolites which are eventually excreted in the form of urea. In other words, gelatine is quickly and completely broken down into waste products.

While, therefore, gelatinous foods have little or no direct value as a part of normal diet, it is not to be assumed, as has been sometimes done, that they are wholly worthless and devoid of all nutritive properties. Collagenous foods, under the influence of the acid gastric juice, are quickly swollen up, and are eventually transformed into soluble and diffusible products—gelatose and gelatine-peptone—which are rapidly absorbed. Further, when once acted upon by gastric juice, they are similarly digested by the alkaline-pancreatic fluid, and hence run little risk of passing through the alimentary track unchanged. Gelatine itself is equally digestible in gastric and pancreatic juice, but collagenous matter can be dissolved by the pancreatic ferment only after it has been subjected to the preliminary influence of acid fluids. The real value of gelatine as a food lies in its ability to protect and diminish the consumption of the more important proteid foods. This power rests primarily upon the ease and rapidity with which it is decomposed within the body, giving it value as a substitute in a limited sense for albumenous matter, the metabolism of which, as already stated, it diminishes. Its value, however, is limited, since it cannot be utilised for the purpose of building up or repairing the tissues.

Containing a somewhat greater proportion of nitrogen than the ordinary forms of animal proteids, gelatine yields a larger amount of urea by decomposition, and consequently when ingested, especially in large quantities, may give rise to an excessive elimination of urea, inducing thereby increased diuresis and consequent thirst and demand for fluid. Further, Schiff is authority for the statement that gelatinous substances promote the secretion of gastric juice, and that consequently they belong to the group of peptogenic foods.

Gelatine has also been observed to produce a slight diminution in the metabolism of non-nitrogenous foods; hence, as stated by Yeo, "it may be accepted as a practical conclusion that gelatine is an 'albumen-sparing' food, and that alimentary substances containing it tend to prevent the destruction of albuminates and fats." Especially useful is gelatine in cases of fever where the stability of the "organic albumen" is threatened, and under such circumstances the capacity for assimilating proteid food is greatly diminished by the addition of gelatine to the naturally light diet of the fever patient.

Without doubt, the efficacy of properly-made beef-tea as a nutrient is partially due to the gelatine it contains, for gelatine taken in this form, or indeed in the form of jellies, is well tolerated and easily digested. As Germain Sée has well said, gelatine may be taken in large quantity with impunity, and is to be looked upon as "an auxiliary means of conservation of our tissues. From this point of view, gelatine cannot be too strongly recommended, prepared in the most various forms and with a variety of flavours." Further, under all circumstances, as a constituent of soups and broths, it occupies an important position among animal foodstuffs as an agreeable albumen-saving nutrient—"Dietetic Gazette."

BAD MEAT PROSECUTION AT OLDHAM.

At the Oldham Police-court on April 25th, a butcher named John Simpson was fined £20 or two months' imprisonment, for exposing for sale unsound meat. The beef was found on premises in the rear of the shop, and the defendant contended it was only awaiting the arrival of the boneman. As soon as the officers entered Simpson threw the piece of meat on the floor, and sprinkled it with chloride of lime. He had been convicted of a similar offence 18 years ago.

LARD WARRANTY PROSECUTION.

At the Aberdare Police-court on April 24th, George Dixon and Sons, of Bristol, were fined for giving a written warranty as to the purity of certain lard, which was, on analysis, discovered to contain 16 per cent. of tallow. The proceedings were originally taken against the retailer, but he was discharged on the production of a warranty. Messrs. Dixon were then summoned, although they had bought the lard from Walsington, of Belfast, with a warranty. The Bench held that such warranty only protected the retailer, and not the middle man. This is the first prosecution in the West of England which has been successful under this section against a whole sale dealer.

COFFEE-SHOP DRINKS.

At Lambeth Vestry Mr. Victor Roger asked whether it would be within the province of the Sewers and Sanitary Committee to take samples of the liquids sold in coffee-shops, such as tea and coffee? As they looked after the publicans, he thought they ought also to look after the coffee-shop keepers.—Mr. Dunn, chairman of the committee, said he would see what could be done. The inspectors would no doubt attend to the matter.

ADULTERATED SUGAR.

At Swinford Petty Sessions on April 26th, Edward Kempster, grocer, of Purton, was summoned for selling 1lb. of Demerara sugar containing 100 per cent. of dyed sugar.—Mr. H. Bevir prosecuted on behalf of the Wilts County Council; Mr. W. H. Kinnear appeared for the defence, and pleaded guilty.—Mr. Bevir said there was no charge of fraud or bad faith against Mr. Kempster, but Demerara sugar was a well-known article of commerce, and it had certain property which the substance supplied to the inspector did not contain. The dyed crystal which took the place of the Demerara sugar was a considerably cheaper commodity, and the analysis showed that the article was really not Demerara at all, but dyed yellow crystals.—Mr. Kinnear, on behalf of Mr. Kempster, said that on the day on which the inspector's assistant called at the shop, Mr. Kempster had gone to Cricklade market and his son was serving in the shop. The son knew both the inspector and his assistant thoroughly well. In the shop was one drawer for Demerara sugar and one drawer for yellow sugar. Unfortunately the Demerara drawer became empty, and the shop assistant filled it with yellow sugar, which was served to the inspector's assistant by Mr. Kempster's son, believing it to be Demerara. Mr. Kempster was well-known as a respectable and a thoroughly honest tradesman, and he much regretted that his son should have sold the wrong sugar inadvertently.—The magistrates felt bound, seeing that the Act was for the protection of the public, to convict, but imposed the small penalty of 1s. and 16s. 6d. costs.

ADULTERATED MILK.

At Southampton Borough Bench on April 24th, Charlotte Light was charged with selling milk with 20 per cent. of cream extracted therefrom.—The Town Clerk (Mr. G. B. Nalder) said the defendant carried on business at 17, Northam-street, and the borough analyst's certificate showed there 20 per cent. of cream was extracted.—William George Powell, the inspector under the Food and Drugs Act, deposed to purchasing milk at Mrs. Light's shop. Mrs. Light told him she sold the milk in the same state as she bought it from the original vendor.—A woman named Annie Eastman, who worked on the establishment, appeared for the defendant, and said she knew that nothing was done to the milk after it was received. The defendant was an old woman, and was unable to walk much, and therefore could not be present in the court that day. She had carried on the business for 43 years.—A fine of 1s. and costs was imposed.

THE MARGARINE ACT.

At Leeds on April 25th, John Thomas West, grocer, Ellerby-street, Bank, was fined £5 for exposing for sale margarine without having a proper label attached thereto, and a penalty of 20s., including costs, was imposed upon John Guinuth, a grocer, carrying on business at Ailesford-avenue, Cross Green-lane, for selling to Mr. W. B. Walker, inspector under the Food and Drugs Act, a pound of butter which the city analyst certified to contain 37 per cent. of foreign fat. Mr. C. J. Joliffe, deputy Town Clerk, prosecuted in both cases.

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To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

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FOLLOWING THE CHANCELLOR OF THE EXCHEQUER'S ADVICE.

At Lincoln on April 23rd, Thomas Colton, landlord of the Talbot Inn, was summoned for selling whiskey which was diluted to the extent of 7 per cent. beyond the limit fixed by statute.—Police-sergeant Bradley, inspector under the Food and Drugs Act, stated that on Thursday, April 5th, he visited the defendant's house, and asked Mrs. Colton for a pint of Irish whiskey. She said she had not got that quantity, but the officer eventually induced her to supply him. She at first did not know what to charge for the spirit, but accepted 2s. 4d. Witness offered to leave a part of the whiskey with her, but she said she did not require it, and he sealed the bottle up in her presence. He had received a certificate that the whiskey was 32 per cent. below proof, which was 7 per cent. below that allowed by statute.—Police-constable Vessey corroborated as to what transpired between Bradley and Mrs. Colton. Witness was sent in by Bradley, and got two pennyworth of whiskey, but he did not drink it.—Defendant said notices were exhibited in his place that the whiskey was adulterated. The whiskey his wife sold was 35 and not 32 per cent. under proof, and it was retailed at 2s. per pint. They hardly ever sold more than 1d. or 2d. worth to their customers, and his wife did not know what to charge for a pint.—The case was adjourned for a week to allow the defendant to produce two witnesses who could prove that the notices alluded to were exhibited at the time the whiskey was sold.

At Derby Borough Police-court George John Appleby, landlord of the Windmill public-house, Willow-row, was fined 10s. and costs for selling whiskey containing eight parts of added water.—Eliza Ann Tatham, landlady of the New Inn, King-street, for selling brandy which was below the legal standard, was fined 5s. and costs.—Luke Smith, landlord of the Old Spot, St. Helens-street, for selling gin containing five parts of added water, was fined 5s. and costs.—Thos. Keene, of the Old Hen and Chickens, was fined 1l. and costs for a similar offence.—Thos. Keenan, of the Lamb Inn, St. Alkmund's Churchyard, for selling adulterated whiskey, containing eight parts of added water, was fined 20s. and costs.—Jos. Henry Frost, landlord of the Golden Lion, Bridge-street, was fined 30s. and costs for selling whiskey containing 50 per cent. of added water.—Ann Heath, Acorn Vaults, Queen-street, was fined 10s. and costs for selling adulterated brandy.

At Swindon Petty Sessions on April 26th, James Simms, of the Red Lion Inn, Cricklade, was summoned for selling a half-pint of gin adulterated with 5'47 per cent. of added water.—Mr. Boodle, who appeared for the defence, raised the question of jurisdiction, contending that the magistrates sitting at Swindon had no power to try cases from Cricklade.—Mr. Bevir maintained that the magistrates had full jurisdiction, and eventually the case was proceeded with, Mr. Boodle being content to make the objection.—Mr. J. W. Ward, son of the inspector, spoke to purchasing a half-pint of gin from defendant's wife for 10d.; he was served in the passage. He saw no notice to the effect that the spirits sold in the house were diluted.—Mr. James Ward, the inspector, having given evidence, Mr. Boodle, for the defence, contended that the notice produced, which was hanging in the bar, protected the seller. It was, he thought, very strange that the inspector's assistant did not enter the bar, where the notice was hanging, but was served in the passage.—Defendant sworn, said the notice had been hanging in a conspicuous place in the bar for years.—The Bench thought there was no intention on the part of defendant to commit fraud, but said it was clear that the notice had not been brought under the attention of the purchaser.—Fined 2s. 6d. and 19s. 6d. costs.

James Linsell, of the Bear Inn, Cricklade, was summoned for selling a half-pint of Irish whiskey containing 5 per cent. of added water.—Mr. Boodle defended.—Mr. J. W. Ward said when he purchased the whiskey defendant suggested that they should drink it between them. He saw no notice, nor was his attention drawn to any notice.—The inspector said the analyst's report showed that the whiskey was 30 degrees under proof, instead of 25, as allowed by the Act.—Mr. Boodle suggested that the heat of the room had caused the whiskey to evaporate, and thus made the water assume undue proportions.—Fined 2s. 6d. and 18s. 6d. costs.

George Griffin, of the White Horse Hotel, Cricklade, was summoned for selling a half-pint of Scotch whiskey adulterated with 10 per cent. of added water.—Evidence was given by the inspector and his son, and the Bench imposed a fine of 5s. and 18s. 6d. costs.

At Caerphilly Police-court on April 23rd, William Aston, of the Rose and Castle Inn, Caerphilly, was summoned for selling Scotch whiskey containing 73 per cent. of water and other extractive matter. Deputy Chief-constable Evan Jones proved the offence, and the Bench fined defendant £2 2s., including costs.

At Llangollen Petty Sessions John Powell, Rockman's Arms, Garth, Thomas Morris, Woolpack Inn, and Robert Ellis, Butcher's Arms Inn, Llangollen, were charged by D.C.C. Vaughan with selling diluted whiskey. Mr. Wynne Evans defended Robert Ellis.—Mr. Vaughan said the analysis of the samples obtained by him showed that in the case of Powell the whiskey contained 12½ per cent. of water over and above the 25 per cent. allowed. In the case of Morris 9 per cent. had been added, and in that of Ellis 6½ per cent. All the defendants said they did it in ignorance, and they were severally fined 2s. 6d. and costs.

Ann Wainwright, of the black Bull Inn, Thurstone, was summoned before the Barnsley magistrates, on April 25th, on a charge under the Food and Drugs Act of selling whiskey which contained an excess of 6·7 parts of water. Wm. Bundy, inspector, proved the case. After purchasing the whiskey he had it analysed, and the certificate showed that there were 6·7 parts of water in excess.—Fined 10s. and costs.

At the Bradford West Riding Police-court on April 26th, Joseph Walbank, innkeeper, of Denholme, was ordered to pay a fine of 10s. and costs for having sold whiskey containing an excess of water to the extent of 7·6 parts.—Walter Bailey, innkeeper, of Idle, for selling whiskey containing an excess of water equal to 2·75 parts, was ordered to pay the costs. Mr. A. Quinlan, inspector for the West Riding County Council, proved the cases.

William Greenfield, White Lion, Charlwood, at Reigate County Bench, was fined 5s. and 15s. costs for selling brandy 29 degrees under proof.—Frederick Cliffe, inspector under the Food and Drugs Act, purchased half a pint of brandy for analysis, and the certificate received from the analyst showed that the spirit was four degrees under the minimum

limit allowed.—Cross-examined by defendant, witness said the brandy was taken from the bottom of a bottle, and he did not think it had deteriorated in consequence.

At Evesham County Petty Sessions William Roberts, landlord of the Coach and Horses, Broadway, was charged with selling whiskey adulterated to the extent of 23 per cent. with water, on March 8th.—Defendant admitted the offence.—P.C. Welsh said on March 8th he asked for a pint of Irish whiskey, for which he paid 2s. 6d. Defendant's daughter served him. Inspector Critchley came in after he had bought the whiskey, and said it had been bought for analysis.—A certificate signed by Mr. Horace Swete, county analyst, proved the adulteration.—Defendant said he bought the whiskey nine months ago; it was then sixteen over proof. He thought it might have deteriorated with keeping. His daughter was not used to mixing spirits, and might have made a mistake.—Fined £1 and 9s. costs.

ADULTERATED GINGER CONVICTION.

At Skipton on April 21st, Hannah Wiseman, grocer, of Gargrave, was summoned for selling adulterated ginger. Mr. W. A. Robinson appeared on behalf of the defendant, and Mr. E. V. Hiley, on behalf of the West Riding County Council, appeared to prosecute.—The case had been previously adjourned in order that the defendant's solicitor could bring his analyst, to substantiate the statement which he had made that the ginger was perfectly pure, whilst the public analyst said it was 30 per cent. deficient. The facts of the case for the prosecution were:—On Tuesday, the 20th of February, the inspector (Mr. A. Randerson) called at the defendant's shop and made one or two purchases, amongst which was the purchase of four ounces of ground ginger. This article was supplied to him, and he paid 4d. for it. The inspector then intimated that he had purchased it for analysis by the public analyst, and accordingly it was divided into three parts. In due time the analyst's certificate was received, and it certified that the sample contained 70 per cent. of genuine brown ginger, and 30 per cent. of exhausted ginger.—Mr. Hiley remarked that on the last occasion when the case was before the Court, the analyst's certificate was put in, whereupon Mr. Robinson stated that he had submitted part of the sample to another analyst, whose certificate diametrically contradicted that of the public analyst, and it was his intention to call that analyst. Accordingly the Bench adjourned the case. On the 14th inst., Mr. Robinson addressed a letter to the inspector, in which he said that they had had time to go thoroughly into the matter, and that they were prepared to accept the certificate of the public analyst. Therefore it was that the public analyst's certificate stood uncontradicted. Mr. A. Randerson, the inspector appointed by the West Riding County Council under the Food and Drugs Act, shortly stated the main facts of the case.—Mr. Robinson remarked that he had two defences to that summons. One of them would depend upon the evidence of the defendant, and therefore he intended, with the Bench's permission, to call the defendant, so as to get the facts of the case, and then he would address them on a point of law, to which Mr. Hiley would have the right to reply.—Mr. Hiley agreed to this proposition, and Mrs. Wiseman was called. She informed the Bench that on the 13th of November, 1893, she purchased a 4lb. tin of ground ginger, for which she paid 3s. She also received an invoice with it, and she sold it to the inspector in the same state as she purchased it.—Cross-examined by Mr. Hiley, the defendant said the invoice was the only document she received with goods, and when she sold the article it was exactly in the same state as when she purchased it.—Mr. Hiley, to witness: What is ground ginger used for?—Mr. Robinson: Stomach-ache (laughter).—No more witnesses were called, and Mr. Robinson addressed the magistrates in defence. Mr. Hiley was right when he said that he had on a former occasion asked for the case to be adjourned in order that the ginger might be analysed. He asked the Bench to send it to Somerset House, but they thought it was not necessary to do so. He accepted, for the purposes of the case, the analyst's certificate. He had given Mrs. Wiseman the opportunity of going into the box and clearing herself in the face of her customers of the insinuation of making the ginger in question anything else than it ought to be. He had two defences upon which he relied. First of all he contended that the inspector had laid his information under the wrong section of the Act of Parliament. The inspector demanded a quarter of a pound of ground ginger, and he got it. The certificate of the analyst did not say that he got anything else. He got that which he asked for; he might have got it of an inferior quality and something might have been taken out of it, he would admit. He, however, submitted that they had complied with what the inspector asked for, viz., the demand for ground ginger. His second defence came under section 25, which provided that if the defendant proved to the satisfaction of the Court that he had purchased the article in question as the same in nature, quality, and substance demanded of him by the prosecutor, and that he had a written warranty, the case should be dismissed. The defendant in that case, argued Mr. Robinson, had sworn, and it was uncontradicted, that she sold it in the same state as when she purchased it. As a matter of law, the question the Bench had to decide was whether or not the invoice was a sufficient warranty. That question had been decided, and it was held that an invoice amounted to a warranty. If they (the Bench) would look at the invoice they would see the words "Four lb. tin of ground ginger." That he contended amounted to a warranty of what they were supplied with, and it was also a warranty in writing. What the inspector asked for was ground ginger, and it was warranted ground ginger. He did not ask for ginger of any other quality, and therefore he (Mr. Robinson) argued that the section under which those proceedings were taken did not deal with the question, and under those circumstances he asked the Bench to dismiss the case.—Mr. Hiley, in reply, said that the objections that were laid were, he believed, not very difficult to dispose of, neither would they prove fatal to his case. In the first place Mr. Robinson had said that the information should have been laid under section 9, and not section 5. Section 9 of the Act dealt with the abstraction from an article, and he (Mr. Hiley) believed that that section was nearly always relied upon in cases of skimming milk. In that case the analyst had certified that it was a mixture of genuine ground ginger and ginger which had been exhausted of its pungent principle. Therefore, it was not the abstraction from the ground ginger, but the mixture of the pure ginger and the exhausted ginger. Under section 6, it is pointed out that any article sold to the purchaser must be of the substance, nature, and

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contains all the albuminous principles of Beef in an active and soluble form; that it contains the hæmoglobin of meat unaltered; and that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession. POINTS OF SUPERIORITY OF

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It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.

How **WYETH'S BEEF JUICE** is to be taken:

Wyeth's Beef Juice should always be taken in Cold, never in Boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour, and activity to overworked and exhausted brain and body.

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Avoid patent medicines; they often contain dangerous drugs; and try this safe and effective remedy, provided by kindly Nature.

"By far the best and purest."—*Health.*

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THE PUREST AND MOST WHOLESOME OF ALL SPIRITS.

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Sole Agent:—MAURICE MEYER, 7, SAYAGE GARDENS, LONDON, E.

quality demanded. The inspector in that case asked for ground ginger, and not for 70 per cent. of genuine ginger and 30 per cent. of exhausted ginger. Mr. Robinson had also raised the point as to inferior quality. That was not a case of inferior quality, but if it was so, then the defendant would have been liable because of not supplying the article of the substance demanded. With regard to the contention of the warranty under section 25, the section provided that the defendant must show that he received a written warranty at the time he purchased the goods. Mr. Hiley went on to say that there had been an invoice in the present case, but that was not a written warranty. The invoice said that so many pounds of ground ginger had been sold, whilst at the same time it did not say that it was warranted pure or guaranteed to be pure, or anything of that kind. Mr. Hiley quoted a case of lard, where it said on the invoice "Kilbert's pure lard," and also "Two barrels of Kilbert's pure bladder lard." That was most certainly a warranty, but in the present case there was no written warranty, and Mr. Robinson had put in an invoice which did not answer that description at all.—Mr. Robinson was about to reply, when Mr. Hiley objected, on the ground that he had no right to reply.—The Bench upheld the objection.—Mr. Robinson: On a question of law I think I have a right. Be it understood, however, that the great County Council objects to the poor grocer replying.—The Chairman said they found that the case had been clearly proved. The seller of the ginger had no written warranty as she ought to have had, and the article had proved to be inferior. They did not intend to inflict a severe penalty. Defendant would be fined 10s. and costs, £1 11s. 1½d.

NOTTS COUNTY COUNCIL.

THE Food and Drugs, Weights and Measures, and Explosives Act Committee reported that during the past quarter the inspectors of weights and measures had stamped 1,465 weighing instruments, 11,180 weights, 1,407 measures, and adjusted 3,433 weights. The fees received for stamping and adjusting amounted to £115 17s. 8d. The County analyst reported that he had analysed 49 samples under the Food and Drugs Act, including 17 samples of milk, 15 of spirits, 13 of butter, and 4 of lard.—On the motion of Mr. Hewitt the report was adopted.

LINDSEY COUNTY COUNCIL.

DR. HUNTER (public analyst) reported that during the past quarter he had analysed 49 samples of food and drugs which had been submitted from various parts of the county. Of these he found that 44 were genuine and five adulterated.—The clerk (Mr. C. Scorer) added that proceedings were taken in three of the five cases referred to, and that convictions resulted.—The Rev. A. W. Savory suggested that more samples of food should be sent up for analysis in preference to samples of spirits.

DO CHANGES OF TEMPERATURE INFLUENCE VENTILATION.

THIS problem Professor Dr. Jiro Tsuboi, in the *Archiv fur Hygiene*, has set himself to settle by means of a series of experiments in a room in Munich. The room experimented upon at some length had air-tight, substantial walls, and an air-tight ceiling. The results of the professor's experiments show that, in rooms with air-tight ceilings and walls hardly any appreciable change of air is induced by changes of the outside temperature. But where the ceilings were not air-tight from any cause the change was not inconsiderable. On the other hand, when a strong wind beat against the windows of the house, even in the rooms with air-tight ceilings the change of air was noteworthy. These experiments prove scientifically that there is no special pore-ventilation of outside walls where they are 1½ bricks thick at least; and seeing that the wind is the only factor to be reckoned in in ventilation which enters by cracks of windows, under doors, keyholes, etc., and through imperfect walls; and seeing further that, where ceilings are not air-tight, the outside air enters not only in high winds but on change of temperature, with evil results in the shape of colds to health, the professor is led to advising the making of all floors in public schools and buildings air-tight, the careful exclusion of outside air through windows, doors, etc., by proper means, and the admission, by some scientifically arranged system of warming and ventilation, of fresh and warmed air in sufficient quantity for the health of the inmates.

A NEW WIND MOTOR.

ROLLASON'S Wind Motor is a new and elaborate form of windmill, which representatives of the Press were given the opportunity of inspecting at Willesden Junction. The new invention is designed to bring the currents of air into the service of electricity. Though the motor is a new form of windmill it differs materially from those

one is accustomed to see in rural districts. It is horizontal in design, and erected within a skeleton turret fixed to the top of an iron structure about 30 feet high. Within the turret is a vertical steel shaft, to which five concave sails are attached. The principle is therefore simple. The mechanism is so finely adjusted that on the least breath of wind the sails and shaft revolve. The shaft runs from the top of the turret to the ground below, and to it at the lower end suitable gearing is provided for working the necessary apparatus for driving the dynamo. Here, then, are very simple means for obtaining motor power. Of course it will be said that on some days there must be insufficient wind to set the sails in motion. The objection, in fact, applied to the early part of the afternoon in question, but this is at once met by the provision of accumulators, of which there may be any number, and by means of which a sufficient storage may always be ready for use on calm days. It is claimed that the simplicity of the invention and the ease with which it may be installed and maintained in any situation, but especially in out-of-the-way districts, will render it of the very greatest utility. The motor at Willesden is being used for generating electricity for lighting purposes.

THE HOUSE OF COMMONS AND VENTILATION.

ONE of Mr. Shaw-Lefevre's last acts as First Commissioner of Works was to instruct Mr. James Keith, C.E., to examine into the heating and ventilating arrangements of the House of Commons. Mr. Keith's report, which has just been presented, recommends—(1) the substitution of silent running open fans, or propellers, of similar form to those already in use in the building for the coke fires, which are now kept continually burning at the base of the various shafts in the towers; (2) the filling of the present steam pipes with water, and the heating and circulation of the water by means of the steam; (3) the utilisation of Tobin tubes in the Committee Rooms for the purpose of securing a more equable diffusion of the fresh air admitted through the floor; and (4) the formation of extract shafts under the side galleries in the legislative chamber, with the object of purifying the air breathed by hon. gentlemen sitting on the back benches and by the occupants of various galleries. In regard to the last suggestion, it is pointed out that under the present arrangement the air admitted into the House by the central grated passage between the two front benches passes direct to the vitiated air chambers above the false roof, avoiding entirely those parts of the Chamber most in need of ventilation, namely—the benches under the galleries themselves.

In concluding his report Mr. Keith says:—"Healthy people accustomed to fresh air and entering a building directly from the outside are the best possible judges as to the condition of the atmosphere inside. The unfailling effect on persons visiting the House of Commons and sitting there, say, for from two to three hours, is, first, a feeling of drowsiness, after which pain over the eyebrows and headache are experienced, and then a feeling of lassitude and enervation ensues. These symptoms point most assuredly to a vitiated state of atmosphere where these people were sitting; and, though the human frame can in time get accustomed to almost any condition of things, persons accustomed to a large supply of pure fresh air feel the difference as sensitively as any good barometer is affected by the varying conditions of the atmosphere, with this distinction—that the effect of continuing to live in and breathe a vitiated atmosphere must necessarily be most injurious to health."

CORRESPONDENCE.

SENDING SAMPLES BY REGISTERED LETTER.

To the Editor of FOOD AND SANITATION.

SIR,—Can you inform me whether it has transpired, in the course of prosecutions under the Sale of Food and Drugs Acts, that samples have been forwarded by Registered Parcel Post instead of by Registered Letter Post, and if so, whether an objection has been raised to this course and sustained?—Yours, etc.,

H. L. S.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

THE PUREST OF ALL SCOTCH WHISKIES.

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LONDON OFFICE:
41, PALL MALL,
S.W.Bonded and
Bottling Stores,
DUMFRIES,
N.B.

LENNOX'S WHISKY

36/-

42/- 48/-

PER DOZEN CASH.

Delivered within London
Carting Circuit, or Carriage
Paid to nearest Railway Station
in Great Britain.Do not drink Blends of Malt Grain
and Potato Spirit.Medical Men and Connoisseurs will find this the
perfection of an absolutely pure & wholesome spirit.

CAUTION!

AVOID LAGER BEERS CONTAINING INJURIOUS DRUGS.

THE
PILSENER LAGER BEER,
O. BRUSTER & CO.,

143a, HOLBORN, LONDON, E.C.

Is guaranteed BREWED solely from
FINEST MALT and HOPS. and FREE
from any PRESERVATIVES WHATEVER

BOTTLING AGENCIES IN ALL PRINCIPAL TOWNS.

This Beer is SPECIALLY RECOMMENDED TO
THE MEDICAL PROFESSION, who may obtain
Samples free on writing to above address.Chafed Skin, Piles, Scalds, Chilblains, Chapped Hands, Neuralgic and Rheumatic
Pains, Sore Eyes, Ear-ache, Cuts, Sunburn, Insect Bites or Stings, Throat
Colds, and Skin Ailments quickly relieved by use of

CALVERT'S CARBOLIC OINTMENT,

Large Pots, 13½d. each, with full Instructions.

Court Circular says: "We cannot too highly recommend Calvert's
Ointment. It is the best general Ointment with which we are
familiar, and ought to be a stock remedy in every household."Private report from Limassol, Cyprus: "I have never found any-
thing to come up to it for neuralgic and 'Rheumatic Pains.'"

Samples sent Free by Post on receipt of value.

F. C. CALVERT & CO., MANCHESTER.

Awarded 60 Gold and Silver Medals and Diplomas.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

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Food and Sanitation.

SATURDAY, MAY 12TH, 1894.

TRADE JOURNALS AND ENTERPRISE.

AMERICA is essentially the land of trade journals, and the support given them is beyond question at the root of the successful manner in which American packers, canners, manufacturing chemists, etc., have spread the name and fame of their products throughout the world. Englishmen never tire of lamenting that there exist so few safe businesses in which capital can be employed, and not long ago one of our noble dukes committed suicide because he was afflicted with half a million of spare capital for which he could not get more than 3 per cent. Everywhere throughout this kingdom the voice of complaint of bad trade is heard, but in scarcely any quarter is there a practical suggestion as to a remedy. Take, for example, our dairy farmers. Here we will let the *Pall Mall Gazette* a journal which W. T. Stead's pruriency and charlatanism dragged into the mire, but which since it passed a few months ago into the hands of an American capitalist has shown such spirit, ability, and public usefulness that it has by sheer merit placed itself far in front of any English evening journal. Why? The answer we believe is to be found in the fact that it does not hesitate

to deal with real questions, that it is not satisfied with the dulness and purposeless word spinning of *The Times*, or the flippant twaddle that afflicts the public as *Telegraphese*. The following from the *Pall Mall Gazette* is to the point, it is true, and it is further useful that it should be so well said:—

"A significant little scene (says the *Pall Mall Gazette*) is to be witnessed in the city of York every market day. Some hundreds of women assemble in the market-place, and sit there hour after hour with baskets before them. They are comely-looking persons enough, and their clothes are scrupulously neat and clean, and still there are unmistakable signs of poverty about them—signs, too, of hopeless dejection. It is impossible to look into their faces and not know that they belong to the "failure" class. They are for the most part the wives and daughters of the small farmers in the neighbourhood, and they are waiting there in the hope of selling their butter. People used to be glad enough to buy their butter, they say, but things have changed of late. They may sit there now sometimes for the hour together without selling a single roll. Their faces flush and their hands tremble as they tell how Danish butter is sweeping theirs from the market. It is all the fault of the powers that be, of that they are sure. If England were but governed as she ought to be, they maintain, not an ounce of Danish dairy produce would ever be brought up the Humber. Now, York is in the very centre of the butter-making district; if our dairywomen cannot hold their own there, they can hold it nowhere. And in York already two-thirds of the butter sold is Danish, and fresh customers are making their way to the foreign shore to the detriment of the dairy industry in the neighbourhood. They are keenly alive to the danger that threatens them, but they are doing nothing to avert it. They are as blind as the veriest Bourbons to their own

interests. Nothing will make them understand that the reason Danish butter is preferred to theirs is that it is of better quality. The dairywomen declare they make their butter precisely as their mothers and grandmothers did before them. There is only one dairy in the neighbourhood that has a separator. Not one in thirty has even a thermometer or a block of ice. And to make matters worse, the dairywomen themselves know just about as much of the science of their craft as the cows do. Yet any suggestion that the way to exclude foreign dairy produce is not to tax it, but to introduce into our own dairies modern appliances and scientific methods of working, is resented as an insult. Our Yorkshire landowner ventured some time ago to recommend the farmers' wives in his district to have a few lessons in butter-making. The next time he appeared in the market town on a market day he was almost hooted. Lord Feversham has been at the trouble to provide a teacher for the wives of his tenants, but he has never succeeded in convincing them that they do not know more than she does. Yorkshire dairywomen, in fact, believe they are the finest butter-makers in the world, and consequently have nothing to learn. So long as they continue to cherish this delusion, all efforts to improve their condition will fail. Even the gods cannot help those who will not help themselves."

Now the reason for this hopelessness is a very plain one. It is because the English farmer, like the English butcher, the baker, the grocer, and manufacturer is satisfied to rest ignorant. He does not read his trade paper, hence he knows nothing of new processes, improvements, or trade movements. The American manufacturer, on the contrary, studies his trade journal, and the result is that nowhere is the trade journal so sensibly edited. To take as an example the *National Provisioner*, New York, from which we have from time to time given our readers admirable excerpts, such as the description in our issue of April 14th of the processes in the great packing house of Nelson, Morris, & Co., Chicago. None of our English trade journals have the nous to make extended investigations into food questions such as the *National Provisioner* carries out, the reason no doubt being that neither the English tradesmen nor the manufacturer have the same keen desire to be thoroughly abreast of the times that their American or foreign rivals have. If we needed proof of this we have but to look back a few years to the period when margarine was first put upon our markets. Here was a new article of food, cheap, wholesome, and an inestimable boon to the poor. For its manufacture we had every advantage upon our side. The vessels bringing oleo from America had to pass Queenstown and could land it there or at Liverpool at cheaper rates than at any other European port. In the neighbourhood of Queenstown and Cork are pastures far finer and cattle in every way superior to the Dutch, and there is also cheap labour—then, as now, well-nigh starving. Here, then, was every advantage for making margarine of the finest quality, since the milk for churning with the oleo may be said to be unquestionably the richest the world produces. But what has been done? Ignorance and want of energy let the margarine manufacture go to Holland, and the oleo passing Queenstown goes to Rotterdam, to be there unloaded and made into margarine, which is sent back to us, and millions of pounds of it are consumed in all our large cities and towns. With labour as cheap, or cheaper, and advantages in freight and quality of milk necessary to give this article of food its butter flavour, we have stood idly by whilst others seize a great trade and fill our markets with their produce. This is due to sheer ignorance, and that ignorance arises from the fact that our merchants, manufacturers, farmers, and shopkeepers occupy themselves with the sorry political drivel of *The Times*, *The Telegraph*, and the like; that they do not study their trade papers and get the best knowledge of what is being done in every civilised land in their own trade or profession. To take another example, if our farmers studied their trade journals would they sit contented whilst brewers use rice and sugar instead of barley in brewing. They would have seen that this legalised adulteration meant ruin to barley growing, and the adulteration would have had no opportunity to achieve the enormous proportions it has now obtained. It is not too late to retrieve our errors, as is seen by the brilliant success that has attended the efforts of the proprietors of Le Dansk, who have

shown that butter substitutes can be made in England of far better quality than any from Holland, and even better than a great part of our pure butter. At Craigmillar, too, at Godley, and now in London itself are factories for the manufacture of margarine. There is no lack of openings for capital to be profitably invested, and just as it has been to the trade journal that America's success is due, so will the development of our native great resources increase just as the trade journals are studied by producers and consumers. Why have we still firsts, seconds, and thirds in Cork butters? Because our dairy farmers are ignorant, and are satisfied to remain so; because our Parliament is a collection of talkative humbugs, and our Government departments are refuges for the mentally dim. The trade paper with its practical knowledge and its suggestions for new development in industries is what is needed to alter all this, for just as the merchant, manufacturer, farmer, and shopkeeper have their eyes opened as to the causes why trade is leaving England, so will they see through Government departmental idleness and ignorance, and political twaddle, and demand that as England lives by its manufactures so shall there be a department concerned with encouraging the organisation of new industries, and manned by practical, educated business men instead of unpractical university nincompoops.

ST. JACOB'S OIL.

SIR,—As inquiries are often addressed to you respecting the composition of proprietary medicines, I beg to send you the result of an analysis of St. Jacob's oil given in percentages:—

Turpentine with traces of camphor	82.407.
Ether	10.000.
Alcohol	5.000.
Carbolic acid	2.018.
Capsicum	0.400.
Aconite	0.013.

There is also a small quantity of origanum, probably employed for scenting purposes, but this has not been estimated.

St. Jacob's Oil is sold in two sizes, at 1s. 1½d. and 2s. 6d.

Messrs. Jabez Monro and Company, of 273, Regent-street, state that the cost of the ingredients of the 2s. 6d. bottle would be under 3d., and if the materials were bought in large quantities, probably very little over 2d. They say from 2d. to 3d. for the 2s. 6d. bottle.—I am, etc.,

WILLIAM MURRELL.

Cavendish-square, W.

ADULTERATED COCOA.

At the Clerkenwell Police-court, on April 27th, Edward Bennett, of 108, King's-cross-road, was summoned for selling half a pound of cocoa, which was adulterated with 50 per cent. of sugar and starch. The defence was that what was sold was chocolate powder. A fine of 5s., and 2s. costs was imposed.

BAD MEAT PROSECUTIONS AT BIRMINGHAM.

In the Birmingham Police-court, on May 4th, Tamar Edwards, stall-holder in the meat-market, Jamaica-row, was summoned for exposing for sale a quantity of meat which was unfit for human food. Mr. Bell (from the Town Clerk's office) appeared for the prosecution, and Mr. Tanner for the defence.—On Saturday, March 24th, Inspector Hothersole saw twelve pieces of meat, which were putrid, lying interspersed amongst good meat on the stall. He subsequently saw the husband, who said he was not aware the meat was so bad, and that he had cut it up on the Saturday week. The meat was condemned and destroyed. Mr. Tanner said the defendant had given up the stall, and her husband was in gaol. The meat had no doubt gone bad from keeping, but it was not from a diseased animal. A fine of 40s. and costs was inflicted.—Theodore Tidswell, butcher, 13, Ashted-row, was summoned for a similar offence. On March 2nd Inspector Wiltshire entered the defendant's shop, which was in charge of a young woman. He saw fifteen pieces of bad meat distributed amongst the good meat in the shop, and called the attention of the assistant to the fact. The meat, which included some foreign joints, was slimy, and gave forth a very bad odour. The defendant was called into the shop, and he asked the inspector to have a drink. The inspector refused, and the defendant then said: "It's all right; I'll send them away," and at the same time he slipped a sovereign into the inspector's hand. The inspector said he should have to report the case, and defendant replied: "Don't; it will ruin me!" Wiltshire kept the sovereign, which he handed to the superintendent, and reported the case. In cross-examination by Mr. A. J. O'Connor, who defended, witness denied that the bad meat was covered with a cloth or paper. Mr. O'Connor admitted that the meat was unfit for food, but denied that it was exposed for sale. Defendant, who had been in business for twenty years, instructed his man to remove the meat, but his orders were neglected. As to the bribery, that was, no doubt, a wrong and foolish act, but that did not prove that the meat was intended for human food. Many people, in fear of possible consequences, paid money to avoid further trouble, even if there was no cause for fear. Defendant was "seized with nervous apprehension of what might occur," and put into the inspector's hand what he thought was a shilling. Miss Holmes, the assistant, stated that she heard defendant order his man to remove the bad meat, which was covered up by a cloth, and the man had neglected to do so. The slaughterman referred to stated that the defendant gave him orders on the previous evening to remove the bad meat, which was covered up, but he forgot it. By the Clerk: He was not told to remove the foreign meat. Mr. Fisher said the case was a most glaring one. Not only had the defendant exposed bad meat for sale, but he had attempted to bribe the officer, whose conduct in the matter was deserving of the notice of his chief. Defendant was liable to a total fine of £300. The magistrates were determined to stop the sale of bad meat, and the fine would be £20 and costs, or two months' imprisonment.

SOMERSET HOUSE AND VINEGAR.

EXTRAORDINARY CORRESPONDENCE.

THE following letters are further proof of how hopelessly at sea the Inland Revenue analysts are about adulteration:—

Exchequer Buildings, Durham.

January 23rd, 1894.

SIR,—I am directed by the Finance Committee of the County Council of Durham to inform you that a recent prosecution for the sale of adulterated malt vinegar in this county has proved unsuccessful, in consequence of the transmission to the magistrates of a certificate of the chemical officers of the department to the effect that the sample in question was a genuine sample of commercial malt vinegar. And with a view to the prevention of a similar miscarriage in future, I am directed to ask you to be good enough to send me a definition of "malt vinegar" and also of "commercial malt vinegar" at your early convenience.—I am, sir, yours faithfully,

RALPH SIMEY, Clerk of the County Council.

The Secretary, Inland Revenue Commissioners.

Inland Revenue, Somerset House, London, W.C.

February 10th, 1894.

SIR,—The Board of Inland Revenue have had under consideration your letter of the 23rd ultimo, stating that a "recent prosecution for the sale of adulterated malt vinegar proved unsuccessful, in consequence of the transmission to the magistrates of a certificate of the chemical officers of the department to the effect that the sample in question was a genuine sample of commercial malt vinegar."

The Board have not before them any report of the cases referred to, except a report from a local newspaper, which is in one respect not strictly accurate, and may be also inaccurate in other respects. The Board have before them a copy of the certificate issued in these cases from the laboratory. A copy of that certificate is attached hereto. From the printed report of the cases before referred to the Board gather that Mr. Stock, the Durham county analyst, stated "In his opinion the certificate of the Somerset House authorities was not correct." The grounds for this opinion have not been forwarded to the Board.

The Board further gather from the printed report that the conclusions arrived at by another county analyst, who was called as a witness in these cases, considerably diverged from those of Mr. Stock. With regard to the question with which your letter concludes, I have to state that the Board are advised that so long as vinegar is prepared from malt or from a mixture of malt and unmalted grain in varying proportions by the acetous fermentation, it is deemed to be commercial malt vinegar.—I am, sir, your obedient servant,

W. B. HEBERDEN, Secretary.

The two samples of vinegar referred to in your communication of the 21st November, and marked Nos. 392 and 393 respectively, were received here on the 23rd ultimo securely sealed. We hereby certify that we have analysed the vinegars, and declare the results of our analyses to be as follows:—

	No. 392.	No. 393.
Acetic acid	3.81 per cent.	3.93 per cent.
Total residue	1.84 "	2.0 "
Mineral matter (ash) ... ..	.184 "	.184 "
Phosphoric acid (pr '05) ... ..	.0512 "	.0537 "
Specific gravity	1013.05 "	1013.75 "

From a consideration of the results of the analyses, including an examination of the extractive matters of the vinegars, we are of opinion that both samples consist of commercial malt vinegar.

As witness our hands this thirteenth day of December, 1894.

(Signed) J. BELL, D.Sc., F.R.S.
R. BANNISTER, F.J.C., T.C.S.
G. LEWIN, F.J.C.

Ralph Simey, Esq.

Exchequer Buildings, Durham.

February 15th, 1894.

SIR,—I have to acknowledge the receipt of and thank you for your letter of 10th instant, acquainting me, for the information of the Durham County Council, that so long as vinegar is prepared from malt or a mixture of malt and grain by acetous fermentation, it is deemed to be "commercial" malt vinegar. I shall be obliged if you will be good enough to send me also a definition of "malt" vinegar, as asked for in my letter of 23rd ultimo. And I have to point out that the reference in my letter just mentioned, to the then recent prosecution, was intended only to show why the definitions of "malt vinegar" and "commercial malt vinegar" were asked for, and not with the intention of raising any question as to the circumstances of that case or the certificates issued by the chemists of the department with reference to it.—I am, sir, yo. faithfully,

RALPH SIMEY, Clerk of the County Council.
The Secretary, Inland Revenue Commissioners.

Inland Revenue, Somerset House, London, W.C.

February 23rd, 1894.

SIR,—Referring to your letter of the 15th instant, I am directed by the Board of Inland Revenue to acquaint you that they have given, on the authority of their chemical advisers, a definition of the term "commercial malt vinegar" as used in their certificates. This definition is practically identical with that of "malt vinegar" in Watt's dictionary of chemistry, namely, "malt vinegar" is prepared from "a fermented wort obtained by smashing malt, or a mixture of malt and raw barley with water, as in brewing"; but inasmuch as it is not the practice of the Board to make use of the latter term (malt vinegar) in their certificates, they do not feel called upon to enter into a discussion as to its precise sense. I am, sir, your obedient servant,

W. B. HEBERDEN, Secretary.

Ralph Simey, Esq.

BRISTOL MILK ADULTERATION.

CHARLES HENRY SMITH, dairyman, of Ashley-hill, was summoned before the Bristol magistrates on May 4th, for selling adulterated milk. The police purchased from the defendant a sample of milk, which the city analyst certified contained 16 per cent. of added water. At the request of Mr. Wansbrough, who represented the defendant, the case was adjourned that the milk might be tested by the Somerset-house authorities.—Henry Charles Alway, of Ashley-vale, was summoned for a like offence. The sample procured by the police was ascertained to contain 10 per cent. of added water. The defence was that the milk had not been tampered with since it came from the farmer. A fine of £1 and costs was imposed.

THE QUALITY OF BRECHIN MILK.

THE following table shows the result of a chemical examination of 23 samples of sweet milk made by Mr. G. D. Macdougald, F.I.C., city analyst, which were sent to him on the 19th ult. by Mr. Smart, sanitary inspector, and which were mostly taken from parties vending on the streets. From the table it will be seen that the samples were anything but regular in composition, some of them being of really first-class quality, while others were very low in fat, viz.:—

Marks on Sample.	Water.	Total Solids.	Fat.	Solids Not Fat.	Remarks.
No. 2	88.13	11.87	3.25	8.62	
3	88.05	11.95	2.90	9.05	Slightly low in fat.
4	87.32	12.68	3.38	9.30	
5	88.05	11.95	2.83	9.12	Low in fat.
6	88.04	11.96	3.12	8.84	
7	86.79	13.21	3.98	9.23	Very high class.
8	88.38	11.62	2.89	8.73	Slightly low in fat.
9	85.13	14.87	6.03	8.84	Very high class.
10	88.40	11.60	2.89	8.71	Slightly low in fat.
11	88.25	11.75	2.91	8.84	Slightly low in fat.
12	85.25	14.75	5.55	9.20	Very high class.
13	88.03	11.97	2.71	9.26	Low in fat.
14	87.40	12.60	4.16	8.44	Very high class.
15	88.53	11.47	2.87	8.60	Low in fat.
16	87.64	12.36	3.38	8.98	
17	87.30	12.70	3.42	9.28	
18	87.23	12.77	3.55	9.22	High class.
19	87.95	12.05	3.09	8.96	
20	87.95	12.05	2.95	9.10	Slightly low in fat.
21	88.16	11.84	3.00	8.84	
22	88.36	11.64	2.87	8.77	Low in fat.
23	88.73	11.27	2.42	8.85	Very low in fat.
24	87.72	12.28	3.13	9.15	

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MALTED
For Infants
and Invalids.
MILK
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

A COOL PROPOSAL TO INCREASE MILK SWINDLING.

IN view of the fact that the average composition of milk during 1893 was

Solids not fat	...	...	8.77 per cent.
and that the fat was	...	...	3.91 " "

as shown by 28,487 analyses made in the Aylesbury Dairy Company's laboratory, the following proposal of the Dairy Trade Protection Society is about as cheeky a one as could well be imagined. It is easy to understand why this amended Act is drafted.

Pure milk in London at the present day is practically unobtainable, save from the Aylesbury Dairy Company, whose milk during 1893 averaged 3.91 per cent. of fat. The article vendid generally as pure milk consists of some seven or eight gallons of separated milk practically deprived of its fat and a gallon of water added to each 20 gallons of genuine milk. It has been pounced upon by vigilant officials in many parts of the metropolis. This swindling concoction shows the solids not fat, and the fat in just about the proportions given in the following proposed amendment to the Food and Drugs Acts, viz:—

Solids not fat	...	...	...	8.50
Fat	...	...	...	2.50

There is already some £870,000 per year filched from the people of London by milk swindling, and the following amendments to the bill would *legalise this enormous fraud*. We need scarcely say that this clause at least must not be allowed to get into any new adulteration Act.

The Dairy Trade Protection Society's proposed amendments are:—

A. 1875 Act.—To Section 6. (1) The introduction of words which shall make it clear that the "seller" of the milk is the beneficial owner for the time being, and not the actual physical seller if an employee only. (2) The increasing of the *penalties generally*, especially for second and subsequent offences.

To Section 23.—The word "three" in the 6th line to be altered to "seven," and provision to be made for a person convicted by the magistrate succeeding on appeal in obtaining a quashing of such conviction being repaid his costs.

To Section 25.—The addition of the following words, viz:—
"Any warranty embodied in a written agreement for a continuous supply of milk shall be deemed a sufficient warranty under this section of all milk delivered under such agreement."

1879 Act.—Sections 2 to 5, inclusive, to be amended so as to provide the right of any person purchasing milk under a continuous contract, on tendering a fee of not more than five shillings, to demand and receive from the local authority of the district the services of the officer charged with the execution of this Act.

4. In addition to the foregoing recommendations, your committee are of opinion that the following additional clauses should be inserted:—

1. That the word "milk" wherever appearing in the Acts should mean pure whole new milk only.

2. That the composition of milk so described should consist of not less than the following constituent parts in every 100 parts, viz:—

Minimum solids, not fat	...	...	8.50
" " fat	...	...	2.50

and that all milk sold and described as above mentioned which, on analysis, fails to satisfy this standard shall be deemed adulterated, and shall render the seller liable to prosecution and the penalties by the Acts provided.

3. No person shall sell or offer for sale any condensed or evaporated milk unless the same shall be put up in sealed tins, vessels, or other packages, and every such package containing condensed or evaporated milk shall have a label thereon showing in clearly printed characters the constituent parts thereof and the proportion of each of such parts to the whole, under a penalty not exceeding £20.

4. Any person who shall add water or other adulterant to, or abstract the fat from, milk the property of his employer, shall be liable to a penalty not exceeding £20, or to imprisonment without the option of a fine, in addition to the value of the milk so damaged.

5. Where an employer is charged with an offence against this Act, he shall be entitled, upon information duly laid by him, to have any other person whom he charges as the actual offender brought before the court at the time appointed for hearing the charge, and if, after the commission of the offence has been proved, the employer proves to the satisfaction of the court that he had used due diligence to enforce the execution of this Act, and that the said other person had committed the offence in question without his knowledge, consent, or connivance, the said other person shall be summarily convicted of such offence, and the employer shall be exempt from any penalty.

6. Any part of any penalty under this Act may, if the Court shall so direct, be paid to the person who proceeds for the same to re-imburse him for the legal costs of obtaining the analysis and any other reasonable expenses to which the court shall consider him entitled.

7. No person shall sell, consign, or deliver by wholesale any separated milk except in churns or vessels bearing the words

"Separated milk" in black letters of at least one and a half inches in length, and no consignee shall receive any such separated milk except in churns or vessels so marked. Any person who shall be convicted of an offence under this section shall be liable to a penalty not exceeding £50.

8. No person shall sell by retail separated milk except from vessels so marked as aforesaid, and any person who shall be proved to have mixed separated milk with whole milk, so that such mixture may be sold as whole or new milk, shall be guilty of a breach of this section. The penalty for either of the foregoing offences shall be a fine not exceeding £50.

MANUFACTURE OF OIL AND FOOD FROM PEANUTS.

THE United States Consul at Frankfort, Germany, makes the following report to the Department of State:—

I have the honour to acknowledge the receipt of special instruction No. 127, dated February 5th, directing me to submit a report concerning the manufacture in Germany of oil, oil cake, and meal from peanuts, and particularly the extent to which peanut meal is used for food in the German army and navy. In compliance with this instruction, I respectfully submit herewith a report, with which are included as exhibits samples of peanut meal, flour, and biscuits, as prepared by the most improved methods in this country. These samples are of essential value to the report.

The use of peanut products by the German army and navy has not yet passed the experimental stage. An elaborate series of trials was completed only a fortnight ago, and the results have been reported officially to the Ministry of War.

Peanuts vary greatly in value according to the quantity, and still more the quality, of oil which they contain. The finest and most valuable come from the valley of the Senegal, in western Africa, while the lowest grades come from Madras. The principal varieties are graded in the market according to richness in oil and general merit as follows (the percentages being based upon equal weights of shelled kernels in condition for grinding):—

	Per cent.
Senegal peanuts	51
Congo peanuts	49
East African peanuts	49
American peanuts	42
Bombay peanuts	44
Madras peanuts	43

The duty on raw peanuts imported from Germany is 4.70 dols. per metric ton (2,240 pounds), and the duty on peanut oil is 2.38 dols. per 100 kilograms, equal to about 9 cents per gallon.

The ordinary peanut or "earth nut" is the seed vessel and seed of the *Arachis hypogaea*, and grows in several of the Southern States of the Union and in Brazil, the East Indies, and on the east and west coasts of Africa. In 1891 there were imported into Germany 15,762 tons of peanuts, a slight increase over imports of the preceding year. The receipts declined to 13,158 tons in 1892, but rose in 1893 to 20,973 tons, of which 25 tons were purchased in New York, 5 tons in Brazil, while 8,471 tons came from West Africa, 5,431 tons from East Africa, and 7,040 tons from British East India. This large supply of imported peanuts is used for the manufacture of oil, and is consumed by about twenty-seven factories, which are located in various parts of Germany, some of the principal ones being at Hamburg, Mannheim, and at Heilbronn, in Wurtemberg.

At the oil mills the kernel are ground or crushed and submitted to three successive pressings, in which a force of about 250 atmospheres is employed. The first pressing expels about 40 per cent. of the oil, the second 4 per cent., and the third pressing from 2 to 3 per cent. of the remainder. Cold-pressed oil of the first pressing from African or the best American peanuts is used in Germany as salad oil and for various culinary purposes. It ranges in price (wholesale) from 14.75 dols. to 26 dols. per 100 kilograms (approximately from 56.7 cents to 1 dol. per gallon), which is far cheaper than any edible quality of olive oil can be imported and sold in this country. The American peanut is larger, sweeter, and, when roasted, better flavoured than any of the others, but its oil is of medium quality and ranks below the African, being worth in the present market 15.47 dols. per 100 kilograms, or 59 cents per gallon. Oil from the East Indian peanut ranges in value from 40 to 50 cents per gallon, and, like the last pressing from African and American nuts, is not used directly for food, but is consumed in the manufacture of soap and for various other technical purposes, among which is included the "fattening" of oleo-margarine.

The most important secondary product of peanut-oil manufacture is the oil cake or meal which remains after the oil has been, as far as practicable, extracted by pressure. This sells for from 30 dols. to 33 dols. per ton, and until within a year or two past has been used in Germany exclusively as food for cattle, sheep, and to some extent for horses, though it is said that it is too rich and heating for working animals, and, except in the coldest weather, causes excessive perspiration unless fed in small quantities and mixed with grains.

Under chemical analysis peanut-oil meal shows such extraordinary richness in nitrogenous elements that the German savants have seized upon it as an obvious source of cheap and highly concentrated material for human food, adaptable not only to army and navy rations, but of timely and important value to the peasant and industrial classes, which have suffered from the long and nearly exclusive diet of bread and potatoes, unmixed with a due

proportion of nitrogenous animal food. This has led to a series of experiments which are still in progress, and to the invention by Dr. Nordlinger, a chemist at Bockenheim, of a series of preparations from peanut meal, which seem destined to play an important part in the future food economy of the German people. The problem was to convert a waste material—the secondary product of oil manufacture—into a palatable, nutritious, and wholesome form of human food, cheaper in cost than the same equivalents of nutrition could be supplied in any other form, and susceptible of simple and easy preparation by any cook of ordinary intelligence. How satisfactorily this result has been already attained is shown by the four samples which are submitted with this report, and which represent the principal forms in which oil cake from peanuts is prepared by the Rademann Food Product Factory of this city, under the processes of Prof. Nordlinger. These are:—

(1) *Peanut grits (Erdnussgrütze).*—The coarse meal dried, purified, bolted, and packed in papier-mache boxes containing one German pound each, which is sold at retail for 12 cents. In this form it is used for soups, cakes, and is cooked like a vegetable as pure.

(2) *Peanut flour (Erdnussmehl).*—Similar to the above, except that the meal is ground and bolted like ordinary flour. Both these preparations give the following analysis: Water, 4.8 per cent.; protein substances, 48.5 per cent.; oil, 22 per cent., and carbo-hydrated elements, 17.9 per cent.

(3) *Peanut biscuits.*—Dry light, highly palatable biscuits, or "crackers," containing 1.85 per cent. of water, 34.84 per cent. of protein substances, 21.51 per cent. of oil, 33.64 per cent. of starch, 2.73 per cent. of inorganic ash, and 5.34 per cent. of various other nitrogenous elements.

(4) *Diabetic chocolate biscuits.*—Highly recommended for persons suffering from diabetes, and containing 2.58 per cent. of water, 44.11 per cent. of protein substances, 29.75 per cent. of oil, 17.1 per cent. of starch, 3.5 per cent. of ash, and 2.96 per cent. of non-nitrogenous elements.

These preparations have been in the market and in experimental use for something more than a year. One of the most important trials which they have undergone was that described in an address delivered before the Berlin Medical Society on February 8th last by Prof. Dr. Fuhrbringer, director of the Freidenstain Public Hospital in Berlin, and published in No. 7 of the *Berliner klinische Wochenschrift* for 1893, a reprinted edition of which I transmit. It gives results of experiments made by Dr. Fuhrbringer, under whose direction the peanut grits and flour were prepared in various forms, and supplied as food to 120 men, women and children, inmates of the hospital named, and suffering from the usual variety of complaints that prevail in a public hospital. The report of Dr. Fuhrbringer enters into medical details and technicalities which it is impracticable to follow here, beyond the general statement that of the 120 patients included in the experiments, more than half found the peanut meal soup palatable and excellent, and ate it gladly whenever it was offered. Of the remainder, eight or ten persons found it disagreeable in taste, and the others, while not especially fond of it, ate it without complaint. All threw well upon it, and the analyses of excretions showed that it had been in general well assimilated.

This being the case with invalids, some of whom were suffering from dyspepsia and other digestive weaknesses, it will be readily inferred that for all persons in robust health, particularly for soldiers, sailors, working-men, and the inmates of prisons and asylums, this cheap and highly nutritious food may have an important value. Its sustaining power is remarkable. Although easily digested and assimilated even by invalids, its durability—for want of a better term—surpasses even that of the hitherto unequalled "Soja bean" of Japan and China. All this has been made the subject of careful experiment by the military authorities of Germany. In the garrisons at Frankfort and elsewhere the men have been supplied with soups made from peanut grits, and the results carefully noted in official reports, which have been recently made by the Ministry of War at Berlin, and which are not yet accessible. The first series of experiments, which was made some months ago, was announced by the Ministry of War as having proved quite satisfactory, and if the later trials are equally favourable, it is probable the peanut meal will be included in the future garrison rations and "field sausage" of the German army.

Thus far, however, the most conclusive evidence in its favour is furnished by the analyses which have been made by several German chemists of high authority, and who have rendered the demonstration more striking by comparing the nutritive value of peanut meal with that of other well-known forms of vegetable and animal food. One of the most conclusive of these is given by Prof. J. König, director of the Agricultural Station at Munster, and published in his "Chemie der Nahrungs und Genussmittel," second edition, volume 1, page 303. In this comparison, which is herewith quoted, the food value of each material is given in the fourth column of the table in "units of nutrition" contained in one kilogram of dry peas, beans, meal, etc.

PRODUCTS.	Nitrogenous elements. PER CENT.	Oily matter. PER CENT.	Nonnitrogenous elements. PER CENT.	Units of nutrition.
Peas	22.85	1.79	32.36	1720
White beans	24.27	1.61	49.01	1752
Lentils	25.7	1.89	53.46	1876
Soja beans	34.08	16.45	29.58	2493
Peanut grits	48.26	19.37	19.06	3134

The bulk price of a pound of prepared peanut meal in Germany is a little more than 4 cents, and as by the foregoing analysis one kilogram of that material contains 3134 "units of nutrition," its price is thus reduced to a cost of about 3 cents per thousand. Upon this fact, as a basis, Prof. König builds the following demonstration, showing the comparative nutritive value and cost per 1,000 units, in Germany, of twelve principal animal and vegetable food materials, viz.:

FOOD MATERIALS.	Nutritive units per kilogram.	Cost per 1000 units.
Skimmed milk ...	216	10.4c
Skim-milk cheese ...	1914	11c
Full milk ...	320	11.5c
Bacon ...	2767	15.5c
Butter ...	2610	20.4c
Veal ...	1157	22.2c
Beef ...	1168	26c
Peas ...	1713	4.2c
Potatoes ...	304	5.1c
Rye flour ...	1328	6c
Rice ...	1177	10c
Peanut meal ...	3135	3c

It follows, therefore, that peanut meal is not only the most nutritious, but, estimated by its alimentary value, by far the cheapest of this whole list of food materials. From its richness in protein and its low proportion of carbo-hydrated elements (starch, sugar, etc.), it is especially adapted to the use of persons suffering from obesity, and may be made to enlarge in a most welcome degree the restricted menu of patients under treatment for excessive fatness of diabetes.

From two points of view, this now demonstrated value of peanut meal as human food would seem to have a direct practical interest for Americans—(1) is its increased cultivation and use as food by the German methods practicable or desirable in the United States? and (2) is this new use of oil cake in Germany likely to stimulate the future demand for peanuts of American origin? From what has been stated concerning the comparative values of American, African, and Indian peanuts as oil-producing material, the case would seem to be against the American product. When roasted it is superior in sweetness and flavour to any of the others, but when raw the oil which it yields is inferior, both in point of quality and quantity, to that produced from the nuts from Senegambia and the eastern coast of Africa, where they are grown and gathered under climatic and industrial conditions with which our country will probably find it difficult to compete.

CREAM RIPENING BY BACTERIA.

THE chief object of the ripening of cream is to produce the butter aroma, and this aroma, though very evanescent, controls the price of the butter. This flavour the butter-maker owes to the bacteria; for by their growth the materials in the cream are decomposed and the compounds formed which produce the flavours and odours of high-quality butter. Different species of bacteria vary much as to the flavours which they produce, some giving rise to good, some to extra fine, and others to a very poor quality of butter. A majority of our common dairy species produce good but not the highest quality of butter. Up to the present time the butter-maker has had no means of controlling the species in his cream, but has had to use those furnished him by the farmer. The bacteriologist can isolate and obtain in pure culture the species of bacteria which produce the best-flavoured butter. He can then furnish them to the creameries to use as starters in cream ripening. This artificial ripening of cream promises much for the near future, although it has been applied only on a small scale at the present time. The use of a pure culture of a species from Uruguay improved the flavour of the butter of a Connecticut creamery over 20 per cent. according to expert estimates. Most species of bacteria in bad butter are probably associated with filthiness. Hence a proper inspection of the barns and dairies to insure proper conditions, especially cleanliness, will be a means of avoiding much of the trouble in cream ripening, and will in many cases result in an improvement of the butter.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(G. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON. E.

THE POULTRY-FATTENING INDUSTRY.

A LARGE party of ladies and gentlemen interested in the poultry industry visited on May 5th the Iville Poultry Farm, at Baynards, near Horsham, the property of Mr. C. E. Brooke, Master of the Poulterers' Company.

The establishment was in full working order, and the various processes of rearing, fattening, cramming, killing, shapening, and dressing fowls were illustrated and described. On a grass field of poor herbage scores of hatching boxes are arranged at regular distances, and in each is a hen either sitting on eggs or with a brood of young chickens. Each hen is taken out of the coop for 15 to 30 minutes daily, and during that time is tied to a small peg in front of the coop, this being the only opportunity afforded for exercise. Each coop is shifted daily the width of the coop, so as to provide a constant succession of fresh, sweet land. The hatching season lasts from the beginning of October to the end of May, and extends, therefore, over eight months of the year. The Indian game and Dorking cross is found to be the best for producing birds for the table, as they readily lay on flesh at the parts where it is most desired. For the first week after leaving the shell the young birds are fed on Spratt's chicken food. Subsequently they get a more varied diet, comprising a mixture of Spratt's food and barley meal in the morning, rice and oatmeal or bonemeal at midday, and wheat in the evening. The cramming-house is capable of accommodating a total of 632 fowls, and the birds enter upon this, the last stage of their career, at ages ranging from four to seven months. The pens or cages are arranged in horizontal tiers, one above another, all round the house, which is kept scrupulously clean. Each pen holds one bird, an arrangement which prevents any waste of energy in unseemly quarrels. For the first week the food consists of a thick mixture of ground oats and water, which is given to the birds in a trough extending along the front of each tier of pens. For two subsequent weeks the birds are fed solely by cramming, and are then ready to be killed. The cramming food consists of a mixture of barley meal, oatmeal, and skim milk, together with the best beef and mutton fat obtainable, the proportion of fat being increased day by day. The cramming machine is a light contrivance which the attendant can wheel along in front of the pens. To feed a bird he takes it out of the pen and places his left hand on the crop, into which with his right hand he guides an india-rubber tube from the machine. By pressing a treadle with his foot, he forces food into the bird's crop, the contract of his left hand with which enables him to judge as to the amount which should be allowed. A careless or inexperienced attendant might easily burst the crop by surcharging it, but a smart man will safely feed 100 birds from the machine in the space of 20 minutes. Feeding in the cramming-house takes place twice a day, at 7 a.m. and 4.30 p.m. The birds show no aversion to the cramming operation—indeed, the clamour that is raised as soon as the machine appears and the number of hungry fowls to be seen stretching their necks beyond the bars of their pens raise in the mind of the onlooker a suspicion that just once in a generation a bird may lose its meal unless it enters upon an audible remonstrance with the attendant. As soon as the feeding is over the blinds of the skylights are drawn down, and the birds are left in quiet and semi-darkness to digest the meal they have received and to acquire an appetite for the next. The pens are only large enough to permit the birds to turn round, so that the wear and tear of muscle which would be involved in running about are avoided. Besides the plump young birds which are thus fed up, old and quarrelsome fowls are fattened and sold for making soup. The output of birds from this farm is about 5,000 a year.

RAID UPON BRIXTON MILK-AND-WATER GENTRY.

AT Lambeth on May 3rd, Mr. Hopkins had before him several summonses taken out by Mr. H. Treherne Wiggs, on behalf of the Lambeth Vestry, against dairymen, for selling milk containing added water.—Messrs. Dibbins and Sons, of Coldharbour-lane, were summoned for selling milk containing added water to the extent of 10 per cent.—Mr. H. J. Smith, clerk to the Vestry, appeared in support of the summons; and Mr. W. H. Armstrong, solicitor, defended.—The facts of the case were admitted, but it was suggested that the presence of water in the milk was due to a leak in the refrigerator in which it was cooled. It was stated that the defendants, who are in a large way of business, had never been proceeded against before.—Mr. Hopkins remarked that the Act of Parliament was passed for the protection of nobody whatever but the consumer, and water which got into milk by means of a leaky refrigerator was just as bad for the consumer as water put in fraudulently for the purpose of adulteration. There was no suggestion that the defendant had been fraudulent, but he was liable under the Act, and must pay a penalty of 20s. and 12s. 6d. costs.—Daniel Davies, of Coldharbour-lane, was summoned for selling milk containing added water to the extent of 12 per cent.—Mr. Ricketts, solicitor, who defended, said the defendant bought the milk from a respectable firm, and sold it exactly as it was delivered.—Mr. Hopkins ordered the defendant, who had been previously fined, to pay a penalty of 43 and costs.—John Broomfield, of Brixton-road, was summoned for selling milk containing added water to the extent of 20 per cent.—Mr. Ricketts, solicitor, who defended, said the defendant had carried on business for twenty-seven years without any complaint, and did all he could to ensure that his customers should have pure milk. There could be no doubt that the milk-carrier, from whom the sample was taken, tampered with the milk, and upon the facts of the case coming to the defendant's knowledge he instantly discharged the man.—Mr. Hopkins admitted that it was hard that the defendant should be liable for the act of his servant; but said it would be difficult to keep the food supply of London pure if it were otherwise. However, an explanation, which was perfectly satisfactory, had been given, and there would only be a nominal penalty of 5s. and costs.—John Cramp, of Acre-lane, Brixton, was summoned for selling milk containing 18 per cent. of added water, and was fined 40s. and costs.

LEGAL.

HIGH COURT OF JUSTICE, (Queen's Bench Division).—Court for consideration of Crown Cases Reserved. (Before Mr. Justice Hawkins, Mr. Justice Matthew, Mr. Justice Cave, Mr. Justice Grantham, Mr. Justice Charles, Mr. Justice Vaughan Williams, Mr. Justice Lawrence, Mr. Justice Wright, Mr. Justice Collins, Mr. Justice Bruce, and Mr. Justice Kennedy.) *The Queen v. Dennis.*

This case, argued last Saturday, and adjourned to be re-argued on account of its importance, raised the question whether a wholesale broker or dealer can be indicted and prosecuted for selling or having for sale unsound fruit, vegetables, or other articles of food under the enactment in the Public Health Act (London), 1891 (54 and 55 Vict., c. 76, s. 47), that if it appears to a justice that any article has been seized or liable to be seized as unsound or unwholesome, etc., he shall order it to be destroyed, and the person to whom it belongs, or did belong at the time of the sale, or in whose possession it was found, shall be liable, on summary conviction, to a fine of £50; or if the articles consist of fruit, vegetables, etc., for every parcel thereof condemned, or at the discretion of the Court without a fine, to imprisonment for six months, with or without hard labour. And (3), where it is shown that any article liable to be seized and found in the possession of any person was purchased by him from another person for the food of man, and when so purchased was in such a condition as to be liable to be seized and condemned, the person who so sold the same shall be liable to fine and imprisonment as above mentioned, unless he proves that at the time he sold the article he did not know and had no reason to believe that it was in such a condition. A subsequent provision enables the party prosecuted to elect to be tried by a jury, and then he is to be indicted as he was in the present case. The defendant is a fruit broker who, at Covent-garden, had sold a quantity of walnuts (20 bags) to one Lyons, a retail dealer, who "shot" them on his stall, and finding them bad, at once took them back to Covent-garden to return them, but found the market over and closed, and then he gave them up to an inspector, who seized them and brought them before the magistrate, by whom they were condemned, and then this prosecution was instituted by the Vestry against the broker by indictment under the above enactment. It was tried before Mr. Warry, deputy-chairman of the South London Sessions, when the defence was rested in part on a "printed notice to buyers," fixed up at the defendant's place of business in the terms:—"Original packages of either fruit or vegetables, the contents of which may partly prove unsound either from delay in transit or any other cause, are sold on the express condition that the buyers 'sort' the contents and destroy the unsound portion before being offered to the public." The chairman left it to the jury to convict the defendant unless he proved that he had reason to believe the walnuts to be good. They convicted him, and the chairman stated a case, in which it was stated that it was the practice of foreign fruit brokers to sell foreign fruit in the original packages without examination (except by opening one or more samples and by seeing whether the outside showed signs of damage, and by testing the weight, and by smell), and the buyers might examine the bulk if they chose; that, as between the broker and the buyer, the buyer was to see the bad fruit destroyed before any were offered to the public; that there was nothing in the external appearance of the bags of walnuts or in the smell to indicate that they were unsound, and that they were the cheaper quality of walnuts. The defendant admitted that he knew that most of the bags would contain some walnuts which were bad, and he sold them with that knowledge. But he said he would not have sold them if he had known they were so bad as they turned out to be. He admitted that the larger part were bad. The walnuts had been in stock for ten days. At the trial it was submitted for the defendant that it ought to be left to the jury whether the defendant intended the whole of the walnuts to be sold as food, or only such of them as were good. But the Judge refused to entertain that question, and only left to the jury whether the defendant sold the walnuts, and whether at the time of the sale they were unfit for food of man, defendant knowing this to be the case, and he told the jury that the defendant could not contract himself out of the Act by such notices as this, and that they must disregard the notice. They thereupon found the defendant guilty, and the deputy-chairman stated a case to raise the question whether the conviction was right. On the first occasion—last Saturday—the case was heard before five Judges, who were divided in opinion, and so it was directed to be reheard, and a difference of judicial opinion still existed.

Sir H. James, Q.C. (with Mr. Finlay, Q.C., and Mr. R. D. Muir), appeared for the defendant and argued the case for him. It was, he said, a question of great importance to wholesale brokers or dealers in foreign fruit, as practically it was impossible to examine it before sale, and it must be left to the buyers to examine it. The question was whether the whole of the walnuts were sold by the defendant as and for the food of man or only the good ones. But that question had never been left to the jury, though it was the real question in the case, and it was not to be assumed that he sold the bad walnuts for human food. [Mr. Justice Cave: For what else could they be sold if not for food?] For manure. Bad fish is often so sold. [Mr. Justice Grantham: Put the case of a cargo of oranges, some of them (as is certain to be the case) bad.] Or a cargo of eggs, some of them certain to be bad. How is the wholesale dealer to detect and distinguish them before he sells? [Mr. Justice Hawkins: And may he not sell them on such a condition as this?] Surely he may. The question ought to have been left to the jury whether the defendant sold the bad walnuts for human food. Why, if this conviction were upheld, no one could sell meat if unfit for human food; and what would become of the cats? [Laughter.] Many things not fit for human food were sold for other purposes. [Mr. Justice Cave: But the defendant though called as a witness, never suggested it.] That does not matter; it was to be proved that he sold the walnuts as human food. [Mr. Justice Hawkins: And it may be said that he gave express notice that he did not sell the bad walnuts for the food of man.] Just so. The indictment expressly alleged that he sold them "for the food of man." Yet that was never left to the jury, and it was never found by them as a fact. It was never put to them; he refused to put it to them. [Mr. Justice Hawkins: He refused to put it to them?] Distinctly so. [Mr. Justice Cave: The Judge held that the notice was not a defence.] No one said it was; but it was evidence to show a good defence—that the defendant did not sell the bad walnuts for food of man. [Mr. Justice Hawkins:—What objection would there be to a sale of two bags of walnuts—one a bag of good walnuts for food of man and one of bad walnuts as food for pigs?] Just so; and would it not be the same if they were in the same bag, and the buyer was told to separate them? [Mr. Justice Mathew: That would be leaving it to the buyer to determine what were fit or unfit for food of man, and is that allowed by the Act?] Why not? But, at all events, it shows that the defendant did not sell the bad walnuts as food of man. That required to be proved by the prosecution. The question affects every importation of corn or rice, and the importer will be liable to be convicted if any portion of it happens to be bad. Every importer knew that probably a portion of the cargo would be unsound. But, under this Act, it must be proved that he has sold the bad part for human food. And, if he sells the whole with such a notice as in this case, is he liable? He cited *Simons v. Payne* (30 *Law Journal Reports*, Exch.), "*Sunds v. Small*" (3 Q.B.Div.), to show that the notice constituted a contract. And, there being thus a contract that the bad walnuts should not be sold as food for man, can the broker be convicted of selling the walnuts as food for man? [Mr. Justice Grantham: Suppose Lyons had carried out that contract and destroyed the bad walnuts, could Dennis have been convicted?] And can he be liable to be convicted because

Lyons did not carry out his contract? Just so. That is the substance of the argument; and it is supported by "Winter v. Hind" (10 Q.B.D. 63). Lyons clearly was not liable when he gave up the walnuts. They were not exposed for sale, and so could not be seized. They clearly were not found in his possession exposed for sale, nor were they "seized," nor could they have been so seized because not at the time exposed for sale. There the enactment does not apply, as to the broker, the original seller; for it only applies where the article is found in the possession of some one exposed for sale for human food; and these walnuts were never so found, nor were exposed for sale as human food.

Mr. G. Elliott appeared for the prosecution, and argued that it could be maintained. He contended that it was in effect found by the jury that the bad walnuts were sold by the defendant for the food of man. [Mr. Justice Grantham: You must show that Lyons purchased them for food for man.—Mr. Justice Hawkins: Where is it found in the case that the walnuts were liable to be seized? The question was not put to the jury whether they were intended for the food of man. Nor were they exposed for sale as food for man.—Mr. Justice Grantham: The defendant is a broker to whom these walnuts were consigned for sale—not necessarily as food for man—and he made a special contract with Lyons to take the good ones as food for man and the others for rubbish.] The costermonger may be unable to distinguish—the importer must do so. The object of the Act is to protect the public. [Mr. Justice Hawkins: Then a broker who has acted honestly may be sent to prison? For if convicted he is liable to be so.] If he sold for human food. [Mr. Justice Hawkins: That would be a question for the jury, and it has not been left to them. The Judge discarded it as irrelevant.] No doubt if the jury had found that the defendant did not so intend there would be an end of the case. [Mr. Justice Hawkins: And the Judge never left it to the jury. Mr. Justice Grantham: And when asked to do so refused to put it to them.] The jury found the walnuts were unfit for food. [Mr. Justice Hawkins: That makes it less likely that the defendant sold them for food of man, as it is admitted he is a respectable man.] The jury found the walnuts unfit for human food. [Mr. Justice Collins: That is quite consistent with his not having sold them for food of man.] The onus of proof was on the defendant. [Mr. Justice Collins: No; not unless a *prima facie* case has been made for the prosecution.] That the walnuts were purchased by Lyons for the food of man is plain; for why did he shoot them on his stall? And why did he withdraw them as soon as he saw them to be unfit for human food.—At the close of the arguments, which took up half the day, Mr. Justice Hawkins, after conferring with the other learned Judges, said: We propose to deliver judgment on a future day.

MR. ENDERBY HANDSLEY'S WARRANTIES AGAIN.

At the West London Police-court on Friday 27th ult., Enderby Handsley, of 79, Copenhagen-street, Islington, appeared to answer to a summons issued by Mr. J. H. Clarke, inspector under the Food and Drugs Acts, for the district of Chiswick, for selling milk from which ten per cent. of fat had been abstracted. Mr. R. F. Finnis, clerk and solicitor to the Chiswick Local Board appeared to prosecute; Mr. Ricketts defended, and on behalf of his client admitted all formalities, but put in two written warranties as a special defence. Due notice had been given in accordance with the Act.—George Tuckman, station foreman to the defendant, was called, and stated that it was his duty to receive the milk at the King's Cross railway station and hand it to the carman, and on April 7th he received at noon ten churns of milk, including one from a Mr. Turbridge, farmer, of Derby, and marked No. 40. The churn contained seven barn gallons of 17 pints, and another churn from J. Watchorn, of eight barn gallons, No. 793. He entered the names and numbers in his book and handed the churns over to the carman. He did not tamper with the milk in any way.—Henry Sargeant, carman, said that he received the churns from the last witness and conveyed them to Brentford. He did not interfere with the milk.—Henry Wiseman, manager to the defendant at the Brentford depot, said that he received the ten churns from the last witness, including one from a Mr. Turbridge, No. 40, and J. Watchorn, No. 793. He put the churns in the dairy and locked it up. On Sunday the 8th he handed 8½ gallons of milk out of churn No. 40, and 3½ gallons from No. 793, to the milk carrier, Watson. He roused the milk up; nothing was done to the milk by him. A sample was taken from each churn before the milk left the dairy and sent for analysis. He now produced the certificates: Watchorn—No. 793, good milk; Turbridge—No. 40, corresponds to 4 per cent. added water; Lample—Chiswick Local Board, No. 244, partially skimmed.—William Watson, milk carrier, stated that he received 12 gallons of milk from the manager on April 8th. He stirred it up before selling. He sold it to the inspector on Sunday the 8th about 8.30 a.m. The milk had stood still for half an hour before being sold to the inspector. The cream he believed had risen. He had been wheeling the milk on his barrow.—Enderby Handsley, the defendant, said he never received any milk without warranties, and that he spent hundreds of pounds per year in having milk tested. He said that cream would not rise in a perambulator on the move. He had always found Mr. Turbridge's right, also Watchorn's.—Cross-examined: On receiving the certificate that the milk was partially skimmed he stopped purchasing their milk at once.—John Watchorn said that he was a farmer at Melton Mowbray, the warranty (produced) was that signed by his wife with his authority.—Cross-examined: She always signed his warranties; he then conveys the milk to the station.—Mr. Finnis, for the prosecution, dwelt at some length on the fact that Watchorn's wife having signed the milk warranty, it was not sufficient for the purposes of the Act. The summons was dismissed.—Mr. Ricketts, in asking for costs, said that some of his witnesses had come a long way, and he hoped the magistrate (Mr. Curtis Bennett) would take that into consideration.—Mr. Finnis, however, pointed out that the Chiswick Local Board were anxious to do all in their power to protect the public, and in consequence were bound to take these proceedings. He also referred to the difficulty, if not the impossibility, to prosecute the warranty giver, having regard to the fact that the milk had been mixed, whom if the latter had not been the case, the Board were determined to prosecute for false warranty. No costs were allowed.

ENFORCING THE ACTS IN HOLBORN.

At the Clerkenwell Police court, on May 1st, Richard Morgan, of Brook-street, Holborn, was summoned for selling butter adulterated with 25 per cent. of foreign fat, and also milk which was adulterated with 10 per cent. of added water. A fine of 44s., including costs, was imposed.

Peter Hislop, of Park-street, was summoned for selling adulterated milk. Mr. Ricketts, who defended, produced a warranty from the wholesale vendor, and the summons was dismissed.

Mrs. Dyson, of Studd-street, was summoned for selling milk adulterated with 8 per cent. of added water. Defendant said she only sold a quart of milk a day. She denied that she had adulterated the milk. A curate from St. Mary's Church attended the Court, and said he knew the defendant to be a person of the highest character and strictest honesty. The Magistrate said the summons did not allege fraud. It was an offence to sell adulterated articles. The only way the seller could secure protection was by obtaining a warranty from the wholesale vendor. A fine of 5s. and 2s. costs was imposed.

Eliza Wilde and Jessie Simmonds, for selling milk adulterated with 6 per cent. and 7 per cent. of added water respectively, were each fined 3s. and 2s. costs. The defence set up was that the milk was sold as received.

MUSTARD AND 15 PER CENT. FLOUR.

At Woburn Petty Sessions on Friday, April 20th, before C. P. Stuart, H. P. Harris, and H. H. A. Hoare, Esqrs., and Major Downes, George Potter, grocer, of Woburn, was charged by Supt. Shepherd, under the Adulteration Act, with selling three ounces of mustard, which, on analysis, was found to be adulterated with 15 per cent. of flour, on March 19th. He was ordered to pay costs, amounting to 11s. 6d.

THE MARGARINE ACT.

At Reading on May 4th, William Henry Faulkner, grocer, of 72, Caversham-road, was summoned for selling adulterated butter, on April 13th.—Mr. Stevens (Deputy Town Clerk) prosecuted.—The defendant pleaded guilty.—Mr. Stevens said the defendant was summoned under Section 6 of the Food and Drugs Act, 1875. In this case he was requested by the Sanitary Authority particularly to draw the attention of the Bench to the fact that notwithstanding the heavy penalties which had been inflicted in that court against other defendants, they had received unceasing complaints that margarine was sold as butter. He asked that a heavy penalty might be inflicted as a deterrent. The sample was obtained in the usual way. The public analyst certified that the sample contained 78½ per cent. of foreign fat other than butter, and consisted of three parts of margarine, and one part of butter.—In reply to Mr. Simonds, Dr. Ashby said that the ingredients were not injurious to health.—The defendant said he was away from the shop when the butter was served, and it was an act of carelessness by an assistant. He bought the margarine at the rate of 10d. a pound, and it was said to contain 75 per cent. of butter.—The defendant was fined £10, including costs, or one month's imprisonment in default.

FOLLOWING THE CHANCELLOR OF THE EXCHEQUER'S ADVICE.

At the Holywell Sessions, on May 1st, Richard Jones, of the Star Inn, Pagitt, was summoned by Superintendent D. Hughes, inspector under the Food and Drugs Act, for selling a pint of whiskey which was adulterated with 8½ per cent. of added water beyond the legal standard of 25 per cent. under proof. A fine of 40s. and 20s. 6d. costs was inflicted.

At Lincoln City Police-court, on May 3rd, Thomas Colton, Talbot Inn, licensed victualler, was summoned for selling whiskey which was diluted with water to the extent of 7 per cent. beyond the limit fixed by statute. Sergeant Bradley stated that on April 5th he visited defendant's premises, and asked Mrs. Colton for a pint of Irish whiskey. She at first said they had not got a pint. He directed her to take it out of a certain tap, and she obtained him a pint. He asked her how much home and pay him. He told her that he wanted to pay, and that he sometimes paid 2s. 3d., 2s. 8d., and 2s. 4d. She then said it would be 7d. per quartern. The whiskey was afterwards certified to be 32 per cent. under proof, namely 7 per cent. below the standard. The defence was that a notice was posted in the bar stating that "Spirits sold here are diluted with water according to price," and witnesses moving being called to substantiate the defence, the magistrates thought there was a doubt in the case, and dismissed it.

THE FERTILISERS AND FEEDING STUFFS ACT.

In the report of the Shropshire County Council district analyst, for the quarter ending March 31st, 1894, Mr. T. P. Blunt says:—Since the 1st of January I have received 20 samples of fertilisers and 14 samples of feeding stuffs for analysis under the Fertilisers and Feeding Stuffs Act, 1893. Of the former, one sample of bones was impure, and a sample of boiled bones contained an excessive amount of insoluble phosphates. Of the latter, three samples contained an excessive amount of sand, and two an unequal quantity of crude fibre. All five samples were in my opinion unsuitable for feeding purposes. The remaining samples, both of fertilisers and feeding stuffs, appeared to be genuine articles, but as in many instances the provision of the Act requiring the production of a warranty was not observed, I am unable to report whether the composition of some of the articles agreed with the warranty, if any.

A MILK DEALER THWARTING AN INSPECTOR.

At Liverpool on April 25th, Benjamin Davies, milk dealer, 72, Penton-street, was summoned for refusing to allow an inspector to examine his premises, which were registered for the sale of milk, and also for refusing to sell a sample of milk for analysis.—Mr. Pearce, who prosecuted, called Inspector Baker, who stated that when he went to the shop he saw only a small mug containing milk, and he judged that there was milk in some other part of the place. He requested the defendant to allow him to look over the premises, and the defendant then said he would let him through the gate of the yard. The defendant then went into the kitchen, and witness went to the back. In the scullery he saw a pan-mug full of milk, and with a couple of measures in it. The defendant went to the door and told him that he could not enter. Witness said that he wanted a sample of the milk, and the defendant said it was not for sale.—Mr. Sellars, for the defence, contended that the defendant had a right to refuse admission to the inspector to a private portion of the premises, and he was also right in denying a sample of milk which was intended for churning, and which was actually churned the following morning.—It was stated that the defendant had been fined £20 and costs for adulterating milk, and he was now fined 20s. and costs in the first case, and £5 and costs in the second.

WHITECHAPEL BOARD OF WORKS ON INADEQUATE FINES.

Mr. W. C. Young, the Board's analyst, reported that during the quarter ended March last, of the 30 samples submitted for analysis, four samples of milk were adulterated with 7, 9, 22, and 22 per cent. of water respectively, and one deficient in cream to the extent of 33 per cent., and diluted with 5 per cent. of water. One sample of oatmeal was adulterated with 15 per cent. of wheat flour. Proceedings were taken with reference to two samples of milk, and fines of £2 and £1 5s. respectively were inflicted; proceedings were also taken in the case of adulterated oatmeal, and the vendor was fined £1. Mr. Legg was glad to see that his remarks with regard to the taking of samples had borne fruit. He hoped they would go on and not stop at 10 per cent. adulteration of milk.—Mr. W. C. Johnson said in a neighbouring parish a prosecution of an adulteration of 6 per cent. had resulted in a conviction.—Mr. J. Harris, C.C., the chairman of the General Purposes Committee, said that the cases were considered entirely by numbers and not by names, so that everything possible was done to ensure the carrying out of the wishes of the Board. Unless the magistrates made up their minds to inflict substantial penalties, the adulterations would continue, as it paid tradesmen to be fined 10s. or 20s.—The report was received and adopted.

BATH.—The analyst reported of a sample of "Demerara" sugar which had been submitted to him that it was white sugar dyed to make it resemble Demerara. The inspector said he specifically asked for Demerara sugar. It was decided to administer a caution.

JEYES' SANITARY COMPOUNDS CO., LIMITED, of 43, Cannon-street, London, E.C., have been awarded a gold medal at the Punjab Exhibition, India, and a gold medal at the Brewers' Exhibition, Manchester, bringing up the number of medals and awards to the company to no less than 59.

AN ANALYST FOR FOOD AND DRUGS.

At the last meeting of the Arr County Council, the Clerk read a letter from Dr. Macdonald, Medical Officer for the County, suggesting that the County Council should now take steps to appoint an analyst under the Food and Drugs Act.—Mr. Bulloch moved that this also be referred to the Finance Committee.—Mr. Davidson seconded the motion, which was unanimously agreed to.

NOTTINGHAM TOWN COUNCIL AND THE ANALYST'S REPORT.

THE Borough Analyst's quarterly report showed that 27 samples of milk had been analysed, one of which was ten per cent. deficient in fat, while the remainder were pure. Of 11 samples of lard one contained one per cent. of water, while of 12 of butter, two contained 35 and 30 per cent. respectively of foreign fat, and one 15 per cent. of water, the remainder being pure.

MORE SENSIBLE FINES.

At Sheffield on May 4th, George Thrall, milk dealer, 60, Campo-lane, Sheffield, was fined £3 and costs for selling adulterated milk.—Mr. Sayer prosecuted, and explained that the inspector visited the defendant's shop on April 7th, and purchased a pint of milk, which on being analysed was found to contain 84 parts of milk and 16 of added water. A former conviction was proved against the defendant.

A CLOSE PERCENTAGE.

At Clare (Suffolk) Petty Sessions on May 7th, Mr. Ralph A. Luffkin, grocer, of Clare, was summoned for selling butter adulterated with 5 per cent. of fat, other than butter fat.—Mr. F. C. Wayman defended.—It appeared the defendant bought the butter as butter from a wholesale firm, agents for an American house, thinking that according to their price list it was the pure article.—The Bench fined him 1s. and costs.

ADULTERATION AT CARDIFF.

At the Cardiff Borough Police-court on May 4th, Elizabeth Samson, of 37, Llandaff-road, was summoned for selling milk adulterated with water on April 10th.—Mr. W. H. Andrew (from the town clerk's office) appeared for the prosecution, and Mr. T. H. Belcher defended.—Inspector David stated that on the day in question he bought a sample of milk from the defendant's son, who was in charge of the cart, and it was found to be adulterated with added water to the extent of 9 per cent.—The magistrate did not think the case at all a serious one, and imposed a mitigated penalty of 10s. and costs.

A GLASS OF MILK—AND WATER.

At Cannock Petty Sessions, William Woodings, Mill-street, Cannock, was summoned by Samuel Toy for selling adulterated milk on the 5th ult.—Mr. R. A. Wilcock prosecuted.—Samuel Toy said that on the date named he sent his son into defendant's shop to purchase a glass of milk, and he himself afterwards also went into the shop and informed defendant's wife, who was serving, what the milk was for. He sent a sample to the public analyst on April 6th, and on the 19th he received a certificate to the effect that the milk was adulterated with 32 per cent. of water.—Defendant was fined £3 and £2 0s. 6d. costs.

LEICESTER AND ADULTERATION.

WILLIAM SWEET, milk seller, Aylestone Park, was summoned at Leicester on May 7th, under the Food and Drugs Act, for selling to Tom Bent, an inspector of the Corporation, milk from which four per cent. of the cream had been abstracted, without making disclosure of such alteration, on April 17th.—Defendant did not appear, but was represented by his mother.—The Town Clerk (Mr. J. Storey), who prosecuted, asked the magistrates to deal with this case, as he would all cases of this class, with some degree of severity. On Friday last six prosecutions were ordered by the committee for alleged adulteration of milk. He said advisedly that the committee were perfectly satisfied there was a great deal of fraudulent dealing in milk in the town, and they were determined, with the assistance of the magistrates, to put a stop to it.—The case was adjourned until Friday week for the attendance of the defendant.

THE MARGARINE ACT.

At the Birmingham Police-court on May 4th, Thomas Daniels, grocer, etc., 180, High-street, Bordesley, was summoned for selling as butter a substance consisting of 100 per cent. of foreign fat. On behalf of the inspector, a woman entered defendant's shop on the 18th ult., and asked for a pound of butter. She paid a shilling for what was served her, and on analysis it proved to be margarine, although it was not so marked. Mr. Fisher said it was really no good inflicting small fines. The case was a most flagrant one—a clear and distinct fraud, nothing more and nothing less. The public must be protected. Defendant was fined £5 and costs. This was his first offence.—A similar case was heard against Edward Thomas Mountford, of 23, Moat-lane. The purchaser of the margarine paid 1s. 2d. a pound, but at the same time she bought some pure butter at 1s. The defendant excused himself that is was entirely due to a mistake. Mr. Fisher said these excuses were of no avail. The defendant seemed to be in a smaller way of business than the previous defendant, and the fine would be £4 and costs.

THE DATE OF SUMMONSES.

At St. Asaph on May 7th, Elizabeth Davies, of Brynecastle, Rhuddlan, was charged under the Food and Drugs Act with selling milk from which less than 47 per cent. of cream had been deprived, on March 19th. Mr. Gamlin, solicitor, Rhyl, appeared for the defence, and raised a technical objection. He said that by the 10th section of the Act it was necessary that the summons should be issued within a reasonable time, and in the case of a perishable article within 28 days. In this case the summons was not served until nearly 34 days afterwards. Inspector Williams said he could not serve the summons until he had the analyst's report. John Owen Evans, a lad of fourteen years of age, said that on March 19th, acting on the instructions of Inspector Williams, he purchased 2d. worth of milk from the defendant. He handed the milk to Inspector Williams. Police-constable Parry proved serving the summons on April 20th. The chairman (Major Birch), said the Bench were compelled to say that the inspector as prosecutor was out of court in the face of that evidence. No doubt the inspector had done what was right. The Bench dismissed the case, upholding the objection.

ISLINGTON AND ADULTERATION SUMMONSES.

THE following summonses, taken out at the instance of the Islington Vestry, came on for hearing before Mr. Dickinson, at the Clerkenwell Police-court, on May 3rd: Jane Figgins, of 8, Holloway-road, was summoned for selling milk which was adulterated with 23 per cent. of added water. Defendant, who stated she only sold a quart of milk a day, was fined 10s. and 2s. costs.

Robert Francis Earle, of 6, Ronalds-road, Holloway-road, was summoned for selling milk adulterated with 9 per cent. of added water. Fined 10s. and 2s. costs.

Benjamin Hawes, of 60, Brunswick-road, Highgate, was fined 5s., and 2s. 6d. costs, for selling milk adulterated with 20 per cent. of added water.

Thomas Felce Stephens, of 79, Malta-road, Leyton, trading as the Hatfield-park Dairy, was summoned for selling milk from which 30 per cent. of its cream had been abstracted. The milk, which had been sold at 2½d. a quart, was purchased from a barrow in the street. A fine of £1 and costs was imposed.

William James Taylor, of 151, Hungerford-road, was summoned for selling milk adulterated with 15 per cent. of added water. Fined 40s. and costs.

WEST SUSSEX COUNTY COUNCIL AND THE SALE OF FOOD AND DRUGS ACTS.

THE report of the public analyst shows that during the first quarter of the year, 82 samples were submitted to him, of which 16 proved to be more or less adulterated.—Earl Winterton moved the adoption of the report.—The Rev. J. Goring said the analyst's report seemed to be of great importance. It appeared to be next to impossible to get pure lard at all, and as regarded many other articles the Food and Drugs Act was really becoming a dead letter. He thought the latter should be brought before the Government in some form, perhaps by a deputation. He moved that in the opinion of the Council the facts contained in the report should be represented to the Government.—Earl Winterton seconded.—The Chairman said he would be willing to go with a deputation. He thought that the analyst should also attend.—Earl Winterton said the analyst would be willing to go.—The Earl of March thought it would strengthen the deputation if the co-operation of other County Councils was obtained.—Mr. Wilberforce thought this was a matter which should be taken up by the County Councils Association.—Earl Winterton agreed. After further conversation, the following resolution was agreed to: "That the Council is of opinion that the facts as to adulteration disclosed in this and previous reports of the county analyst should be brought to the notice of the department of the Government responsible for such matters, and that the clerk of the Council be directed to convey this resolution to the County Councils Association, with a view to joint action in the matter, and to send copies of the resolution to the other councils."

CORRESPONDENCE.

SENDING SAMPLES BY REGISTERED LETTER.

To the Editor of FOOD AND SANITATION.

May 8th, 1894.

SIR,—In reply to your correspondent H. L. S., I would point out that the only legal way of sending samples to public analysts is by registered *parcel* post, and that if any sample is now sent as a registered *letter* any prosecution undertaken in respect of it ought to fail.

This change has been effected by section 11 of the Post Office Act, 1891 (54 and 55 Vict., c. 46), which amends the Act of 1875 in the following terms:—"In section 16 of the Sale of Food and Drugs Act, 1875, respecting an article forwarded to the analyst through the post-office, the words 'registered parcel' shall be substituted for the words 'registered letter.'"

On referring to *The analyst*, vol. xvii., page 36, it will be seen that for some time before the passing of that Act there had been no legal way of transmitting samples by post, because the Postmaster-General had ceased to permit them to be sent as registered letters.—Yours, etc.,

ALFRED ASHBY,

Medical Officer of Health and Public Analyst.

YEAST!! YEAST!!

JANSEN & COMPY.

WESTMOLENSTRAAT, SCHIEDAM (HOLLAND).

Gold Medal, Amsterdam, 1888.

A Good Reliable PURE YEAST is

JANSEN & CO.'S PARROT BRAND.

TRY IT!

May be Ordered direct from our Manufactory.

Fresh Shipments Daily.

COLEMAN'S

"WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

Sole Manufacturers:

COLEMAN & CO., Limited, NORWICH and LONDON.

A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps

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OFFICIAL ADVERTISEMENT.

BOROUGH OF JARROW.

TENDERS are invited for the supply of the following
Disinfectants for a period of twelve months viz. :—

Carbolic Powder (in half-ton lots, quote per cwt.).

Sulphur Cakes (quote per cwt.).

Soluble Disinfecting Fluid (in bulk, 42 gallon casks, quote per gallon).

4 oz. bottles Disinfecting Fluid (per gross).

Soap (per cwt., in lb. bars).

Tenders (with samples and guaranteed strength) to be sent to the undersigned, marked "Disinfectant," before Saturday, June 2nd, 1894.

W. S. DAGLISH, *Town Clerk.*

Food and Sanitation.

SATURDAY, MAY 19TH, 1894.

HAMBURG BUTTER.

WE have warned the trade so often against the wiles of the Hamburg gentry that we should imagine no dealers who really interest themselves in knowing their business as it should be known can look upon Hamburg butters without suspicion. The following prosecution comes as a timely warning. At Manchester on May 4th, Messrs. Willer and Riley, butter merchants, Tib-street, were summoned at the instance of the Manchester Corporation, under the provisions of the Food and Drugs Act, 1875, for selling to an inspector duly appointed an article which was not of the nature, substance, and quality of the article demanded. Mr. Sutton prosecuted and Mr. Byrne defended.—Mr. Sutton, in opening the case, said the defendants were summoned for selling butter which was found upon analysis to be adulterated with foreign fat. On October 17th last Inspector Holland called at the defendants' warehouse and purchased a pound of what purported to be pure butter. A portion of the sample was afterwards analysed by Mr. C. Estcourt, the city analyst, who had certified that it contained 18 per cent. of foreign fat; in other words, that it was margarine.—Inspector Holland spoke to the purchase of the butter. On the tub from which the sample was taken were the words "Selected new milk dairies. Foreign produce. Guaranteed pure butter."—The analyst's certificate was accepted by the defence as being substantially correct.—Mr. Byrne, for the defence, said his clients were one of the largest butter importing firms in England. The butter in question belonged to what was known as Hamburg factory butter. It was known in the trade as "secondary butter," but it should in all cases be pure butter, and not mixed with foreign fat. The particular butter now complained of was received by his clients from a person named Möller, of

TRUE RECIPROCITY!

OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

"SILVER VEIL,"

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

Why support the product of a country which brags of the McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDEN'S FACTORIES, LIVERPOOL.

Hamburg. They began to deal with Möller in 1891. Reports had from time to time appeared in the trade journals impugning the genuineness of Hamburg butter. The defendants wrote to Möller, and each time he wrote back assuring them that his butter was perfectly pure, and that he took all responsibility if it turned out otherwise. Not deeming Möller's assurance sufficient, the defendants sent samples of their butter to various English analysts for examination, and in every case except one the reports were that the butter was genuine. Under the circumstances, therefore, they thought they were justified in continuing to sell it to their customers. He (Mr. Byrne) submitted that as Möller guaranteed on his invoice that each consignment of butter sent to the defendants was absolutely pure that constituted a warranty within the meaning of the Act of Parliament, and that they were exempt from prosecution under that warranty. With regard to the question of knowledge—which was necessary under the Act to make the warranty operative—evidence would be given on behalf of the defendants to show that they sold the butter in the exact condition in which they received it, and that they had no reason to suspect that it was other than genuine butter.—Mr. Julius Willer, one of the defendants, was called, and gave evidence in corroboration of Mr. Byrne's statement.—Mr. Sutton, however, contended that the warranty was insufficient, as it was only in general terms, and did not refer to each cask of butter specifically, which, he submitted, was necessary under the Act. Further, the warranty could only be given by an English subject—one subject to the laws of the realm—and not by a foreigner, over whom English courts had no jurisdiction. If this were not so, then the penal clauses of the Act were useless. He thought it was clear that the defendants had reason to suspect the genuineness of the butter from the tenor of their letters to Möller.—Mr. Byrne, in reply, submitted that section 25 of the Act, which had reference to the giving of a warranty, could not be construed into meaning that only an Englishman could give a warranty. He also pointed out that on invoices where the whole of the items mentioned referred to one article—namely, butter—the guarantee as to its purity at the foot of the invoice must refer to each item specifically.—Mr. Headlam said he had considerable doubt as to whether a warranty given by a foreigner was good.

On May 10th, Mr. Headlam gave his decision and said that the point relied upon by the defence was that the butter was purchased under such express guarantees as to its purity by the foreign vendor as to constitute a warranty, and so exempt them from prosecution under the Act. The magistrate said he was against the defence on that point. He did not think that a foreign merchant, who was not amenable to English jurisdiction, could give a warranty which would hold good in an English court. He should therefore fine the defendants £5 and costs.

EXCESS WATER IN IRISH BUTTER.

ON May 5th, the Cork magistrates imposed a fine of 20s. with 20s. costs, on Timothy Herlihy, of Droona, Headford, a Kerry farmer, for sending to the markets a firkin of butter containing 21.58 per cent. of water. The prosecution was instituted by the trustees of the Cork Butter Market, who asserted that the butter was unsaleable, and demanded that it should be forfeited. This the Bench refused to do, however, on the ground that the defendant was admitted to have sent honestly manufactured butter to market for thirty years. Another point raised in his defence was that in the case of the Manchester prosecutions it was held that 22 per cent of water was not too much, upon which Alderman Flavin interpolated the remark that he was sorry to see Irish farmers relying upon that decision. It would be well for the Irish butter trade to take up this water question rather than allow it to be fought out in English police-courts, and to establish and enforce some definite rule as to what percentage of water shall or shall not be excessive.

THE "KEELEY" GOLD CURE.

THERE has been so much doubt cast upon the assertion that this nostrum contains gold that the following analyses are of interest:—
"Report as to the Existence of Gold in two samples of The Keeley Remedy for Drunkenness, No. 1 and No. 2."

"From JAMES EDMUNDS, ESQ., M.D., M.R.C.P. LOND., F.C.S., etc., Medical Officer of Health and Public Analyst for St. James's.

"Having been called upon, as one of the public analysts for London, to examine two bottles of medical tinctures known as 'The Keeley Remedies for Drunkenness No. 1 and No. 2,' in order to determine whether these medicines contained gold, I went on March 13th, 1894, to the Keeley Institute, No. 6, Grenville-place, London, so as to select my own samples for the analysis.

"On the store-room being unlocked, I saw some hundreds of wooden cases all precisely similar, and I selected, from different parts of the stock, two cases, each case branded in red ('D₂'). On March 17th I called again and selected two other cases precisely similar in appearance and brand, but from another part of the stock. I satisfied myself that the four cases which I thus obtained were original packages from Dwight, and that they were fair samples of the medicines which I found in use at the Keeley Institute.

"There being a dispute over the question whether these 'remedies' contained gold, I asked the eminent analyst and assayer, Mr. Alfred Henry Allen, F.C.S., F.I.C., etc., public analyst for the City of Sheffield and West Riding of Yorkshire, vice-president and formerly president of the Society of Public Analysts, and the author of the well-known laboratory manual, 'Commercial Organic Analysis,' to kindly analyse one set of the medicines, while I analysed another set. Illness on the part of Mr. Allen delayed action, and it was only on April 18th that Mr. Allen received from me one of the original packages with a view to give this matter his personal attention. This package was transferred by me to Mr. Allen unopened and intact as I had obtained it.

"On opening the other packages I found each to consist of an outside wooden case containing a pair of semi-circular eight ounce Keeley bottles. Each bottle had its Keeley seal and signature-label over the cork intact and perfect. The bottles were distinguished as No. 1 and No. 2 respectively. The directions were as follow:—

"The medicine must be taken in teaspoonful doses, in half a glass of water, at least six times a day, and oftener if the desire to drink is intense. The first dose must be taken immediately on getting out of bed in the morning, the last dose just before getting into bed at night, and the other four doses before meals and between meals. If the medicine makes the patient sick at the stomach the first day or two, he must reduce the dose to half a teaspoonful till the sickness passes off; then gradually increase to a teaspoonful as soon as possible."

"Each bottle would thus probably be taken in about a week. No. 1 during the first week, No. 2 during the second week.

"Upon opening the bottles, I found that each contained an aromatic bitter tincture. On examining the tinctures, they were not identical in all respects, but each was charged with 25 per cent. of alcohol—about half the alcohol which the weaker tinctures of the British Pharmacopœia contain. I found that each tincture contained gold. Assuming that the contents of each bottle would be taken in about a week, the gold was present in the usual medicinal doses.

"Mr. Allen informs me that, by another method of analysis in his laboratory at Sheffield, he also found gold in each bottle. I enclose Mr. Allen's report herewith.

"JAMES EDMUND.

"29, Dover-street, Piccadilly, London, May 8th, 1894."

"Public Analysts' Laboratory,

"67, Surrey-street, Sheffield,

"May 7th, 1894.

"Report on the Presence of Gold in the Keeley Remedies, Nos. 1 and 2.

"I thereby certify that on April 18th, 1894, I received from my friend, Dr. James Edmunds, public analyst for St. James's, London, a wooden case branded in red ('D₂'), and having written on it in blue pencil in Dr. Edmunds's handwriting 'Selected March 17th, 1894, by J. E.' I have no doubt that what I received was an original package unopened and intact.

"On opening the case I found it to contain a pair of semi-circular eight-ounce bottles, labelled respectively 'No. 1' and 'No. 2,' and having the Keeley seals and signature labels intact and perfect over each cork.

"On submitting the contents of the bottle to analysis, I found in each case gold in medicinal doses. The gold was obtained in the free state as the characteristic yellow metal. The method of analysis was quite distinct from that adopted from Dr. Edmunds, but the amounts of gold found in the tinctures by me were in close accordance with those concurrently found by him.

"ALFRED H. ALLEN, F.I.C., F.C.S.,

Past President of the Society of Public Analysts,
Public Analyst for the West Riding of Yorkshire,
City of Sheffield, etc.

Author of 'Commercial Organic Analysis.'"

PUNISHING A FALSE WARRANTY GIVER.

ON May 9th James Parsons, farmer, of Hill Farm, Horsington, Bath, Somerset, appeared at the Southwark Police-court before Mr. Fenwick to answer to a summons taken out by Mr. Henry Thomas, chief sanitary inspector to the Bermondsey Vestry, for that he did unlawfully give a false warranty in writing to Messrs. Abbott Bros., of 22, Creden-road, S.E., in the County of London, in respect of an article of food, to wit, milk, sold by him to them.—John Henry Abbott stated he entered into an agreement with the defendant to supply his firm with pure unskimmed milk, to be delivered at Waterloo Station. The signature on the agreement was in Parson's writing.—W. Coulson, guard, said on April 9th he brought a churn of milk, directed to Messrs. Abbott Bros., in his train from Templecombe to Waterloo, which arrived at 10.18. p.m. It was impossible for the milk to be interfered with while in his charge. Two railway policemen proved the milk had not been tampered with from the time of arrival to its delivery to Messrs. Abbott's carman; the milk was traced step by step until the inspector made the purchase.—Mr. Thomas said he met Abbott's man in Lynton-road and purchased of him a pint of milk, which he submitted to the public analyst, Mr. Bodmer, whose certificate stated the milk was adulterated with 5 per cent. of added water and 15 per cent. deficient in butter fat.—In reply, the defendant stated the cream must have been spilt out while the porters were rolling the churn along the platform.—Mr. Fenwick: How about the water?—Defendant: All milk contains some water; there are no streams of water along the road to Templecombe Station, so my lad could not have watered the milk.—Mr. Fenwick: Is anything known of the defendant?—Mr. Thomas: No, sir.—Mr. Fenwick: There will be a fine of £10 and £2 2s. costs. Defendant: Can I go to prison instead of paying the fine? Mr. Fenwick: One month. Later in the day the defendant was again brought in, and in reply to Mr. Fenwick said he had no goods.—Mr. Fenwick: You have cows?—The defendant: Yes, plenty; but you shan't touch them.—Mr. Fenwick: If the money is not recovered by distress you will have to go to prison.—The Defendant: Then I'll go now. With considerable difficulty the *modus operandi* of "distress" was explained to the defendant, and he was allowed to go. The summons against Messrs. Abbott Brothers was dismissed.

ANOTHER LARD PROSECUTION.

AT Bristol Police-court on May 9th, Arthur Hulbert, a grocer, carrying on business at 8, Paul-street, Bedminster, was summoned under the Food and Drugs Act for selling adulterated lard. The case was proved by Inspector Drew, who stated that he had purchased a sample of lard from the defendant, which the city analyst had found to contain not less than 10 per cent. of beef stearine. Defendant, who said that he did not know but what he was selling pure lard, was fined 20s. and costs.

LIGHT AND DARK WALL PAPER.

EVERY one knows that when the walls of a room are papered with a light paper it looks much more cheerful, but we hardly realise the great difference between dark and light papering. A scientist has now measured it in the following way, and has come to the following results. Suppose the room is covered with black cloth, and requires one hundred candles to give it a certain degree of light. If you take away the black cloth, and paper the room with dark brown paper, eighty-seven candles give the same amount of light. With blue paper seventy-two candles will do, with fresh yellow paint sixty candles give as much light, and with clean deal board walls, fifty candles are sufficient. But if the room be painted in white, fifteen candles make it as light as eighty-seven candles with the dark brown surroundings. The conclusion is evident. Not only is it bad for the eyes to have a sudden contrast of dark and light, but it is also much more expensive to light twelve candles where two or three would be sufficient.

BEER STATISTICS.

ACCORDING to the *Monde Economique*, the annual production of beer for the whole of Europe is estimated at 3,036,000,000 gallons. Germany makes the largest quantity, about 1,051,664,000 gallons, of which 630,380,850 gallons are contributed by Northern Germany, 337,167,400 gallons by Bavaria, 69,817,000 gallons by Wurtemberg, 55,191,000 gallons by the Duchy of Baden, and 16,703,000 gallons by Alsace Lorraine. The United Kingdom follows Germany. Then comes Austria with 302,025,000 gallons. Bohemia alone is represented in this amount by nearly 110,000,000 gallons, and Lower Austria (including Vienna) by more than 44,000,000 gallons. Belgium consumes 220,000,000 gallons. Denmark has a production estimated at 52,492,000 gallons, and Norway at 37,673,000 gallons. Then comes Russia with 64,427,000 gallons, Switzerland with 26,101,000 gallons. Spain with 22,550,000 gallons, Italy with 3,025,000 gallons, Turkey with 3,080,000 gallons, Roumania with 220,000 gallons, Luxemburg with 2,066,000 gallons, Servia with 2,046,000 gallons, Greece with 213,000 gallons, etc. It is curious to note that outside of Europe little beer is produced, except in the United States, where the manufacture in 1892 is estimated at 812,209,000 gallons; Japan representing 4,855,000 gallons; Australia, which produced 35,449,000 gallons, and Algeria with an average annual production of 550,000 gallons.

BLACK PEPPER SWINDLES.

THE *National Druggist* states of the usual adulterations of black pepper (the ground pepper of commerce), and also the best way to detect same.

The following comprise the principal articles used in the commercial falsification of pepper (on a large scale): 1. Kernels of the olive: The extent to which this falsification was carried a few years ago would be almost incredible did not authoritative reports, emanating from French, German, Italian, and other commissions attest it. Indeed, so bold and shameless was the preparation of, and trade in, this material, for the open and avowed purpose of adulteration, that the manufacturers (usually expressers of olive oil) sent their circulars to parties in the pepper and spice trade with as little precautionary attempts at secrecy as they would have adopted with an ordinary price current. The detection of the adulterant was at first rather difficult, but micro-chemical methods of examination have been devised which leave but little to be desired in this direction. The best test that we have used is a tincture of iodine, made by dissolving 13 parts of resublimed iodine in 240 parts of alcohol of 80 deg. Mix 80 parts of the tincture with 100 parts of the pepper, cover, and let stand an hour or so. On examining the material under the microscope the fragments of olive kernels will be found to be stained a clear yellow, which makes them very conspicuous among the black and maroon of the true pepper.

The stems of the pepper plant are frequently and to a large extent used as an adulterant of the ground pepper. These may be discovered by the aid of the microscope, by the difference in their fibrous structure, etc. A whole host of other vegetable structures are used for the same purpose. Earthy matters, steatite, etc., are also used. Incineration and examination of the ash easily reveal them. Among chemicals, lead chromate has been extensively used. The best method of detecting it is to incinerate a few grains of the suspected sample, and test for the chromic acid reaction.

Among the adulterants most difficult of detection is buck-wheat flour, the starch grains of which and of black pepper are so nearly identical as to be practically undistinguishable under the microscope. This adulterant, as well as toasted breadcrumbs, can usually be detected by means of the hairs of the grain, or fragments of them, which are always present even in the finest flours.

As stated, the adulterants are almost innumerable. The following is the technique of examination which we are in the habit of using, and which we have found to be the simplest and most reliable.

The microscope is fitted with a polarising apparatus, a 2-inch eye-piece and a 1-inch objective. This stand is placed upright and the polarising apparatus turned until the light reflected by the mirror is nearly but not quite extinguished. A pinch of the pepper to be examined is dropped on a slip moistened with water and covered with a cover-glass. The apparatus is now directed toward the source of light (direct illumination), and on examination the pepper is seen as dark granules on a deep bottle green ground. The starch granules, fragments of olive kernels, vegetable fibres, etc., show up brilliantly. Having determined, with this feeble magnifying power, the presence and approximate amount of adulterants, higher powers and micro-chemical reagents may be resorted to to determine the nature, etc., of the adulterating material.

FOLLOWING THE CHANCELLOR OF THE EXCHEQUER'S ADVICE.

At Coventry Police-court, on May 16th, William Cough, landlord of the Spread Eagle Inn, West Orchard, was summoned for adulteration of rum. The Town Clerk prosecuted, and said the quantity of rum purchased by the sanitary inspector was 39 per cent. under proof, or 18.7 per cent. more than that allowed by Act of Parliament. Gin purchased at the time was 5 per cent. under that allowed by law. The defendant said he left the mixing of the spirits to his wife. The Bench, who said defendant did not seem suitable for the business, imposed a fine, including costs, of £2 1s.

At the Bradford West Riding Court on May 10th, Ann Brotherton, landlady of the New Inn, Calverley, was fined 20s. and costs for selling whiskey which was 8.4 deg. under the minimum strength allowed by law.

DO ENGLISH CONFECTIONERS AND SAUSAGE MAKERS PRACTISE THIS DODGE?

THE concern which has been offering barytes to confectioners as a weight-making adulterant has found a new line of customers among the sausage case trade, as may be judged by the following clipped from an exchange in New York:—

"Several of the casings dealers in this city and vicinity have recently received a very curious communication. It emanates from a concern which handles a certain kind of metallic earth, and suggests that the casings dealers adulterate their salt with this product. Being the heaviest of the earths, its use would add greatly to the weight of casings in bulk.

"We do not blame the concern in question for making this suggestion to the casings dealers. We know the scoundrel who engineered the proposition, and who gave the 'earth' concern to understand that the casings dealers would be glad to secretly adulterate their salt with anything, injurious or otherwise, that would add to the weight of shipments."—*The American Analyst*.

FOOD REFORM.

A COURSE of six lectures explaining the component parts of the Human System, the unity of disease, and its successful treatment by the adoption of a judicious dietary system, will be given by Fraulein Lepper at the Association of Women Lecturers. (Office: 4, Caroline Place, Mecklenburgh Square, W.C.) Subjects:—Thursday, May 17th, The Chemical Properties of Fish, Flesh, and Fowl; Monday, May 21st, The Chemical Properties of Grains; Thursday, May 24th, The Chemical Properties of Vegetables; Monday, May 28th, The Chemical Properties of Fruits; Thursday, May 31st, The Chemical Properties of Condiments and Spices; Monday, June 4th, The Chemical Properties of Drinks. Time, 5 o'clock punctually. The lecture will last one hour and be followed by discussion. Tickets for course, 10s. 6d., to be obtained from Edith Bradley, Secretary.

WHY NOT TAX PETROLEUM?

MR. H. M. CADELL says: "In view of the extent of the imports of foreign mineral oil, it would be wise policy if the Government would lay a penny a gallon on such oil instead of on the already heavily-loaded incomes of patient taxpayers. This would produce a substantial revenue and at the same time prevent the total annihilation of an important home industry, the throwing idle of thousands of industrious workers, and the loss of millions of valuable capital invested in our oil works and mines. Already, he said, the import of one sort of fuel—tobacco—was taxed, and experience showed that the duty in no way decreased the consumption; and while tea, which was now far more of a necessity than oil at 3d. a gallon, was still subject to duty, he did not see how there could be any real objection, other than that of mere sentiment, to the raising of much-needed revenue by the imposition of a small duty on every gallon of mineral oil landed on our shores." An easier way, however, to benefit our native industries would be to raise the flash-point to a safe one. At present Abel's murderous flash-point, apparently devised in the interests of foreign oil rings, causes hundreds of unfortunate persons to be roasted yearly, and in addition has ruined a big native industry. We do not need protection by a tax, but we badly want protection from scientific ignorance or worse.

CONSTANTINOPLE AT OLYMPIA.

IT should interest intending visitors to this spectacular entertainment to know that the premises are efficiently disinfected throughout by the Jeyes' Sanitary Compounds Company, Limited, with their celebrated fluid and powder, thus ensuring against any risk of infection, to which large concourses of people are at all times liable.

HORLICK'S
MALTED
For Infants
and Invalids. **MILK**
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
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THE VALUE OF A WATER ANALYSIS.

A WATER analysis is really not an analysis at all, properly so called, but is a series of experiments undertaken with a view to assist the judgment of determining the potability of the supply. The numerical results of a water analysis are not only unintelligible to the general public, but are not always capable of interpretation by a chemist, unless he be acquainted with the surroundings of the spot whence the sample was drawn, and be posted as to the analytical methods employed. It is very common for water to be sent for analysis, with a request that an opinion be returned as to its suitability for potable uses, while at the same time all information as to its source is not only unfurnished, but is intentionally withheld, with a view of rendering the desired report unprejudiced in character. Such action is not only a reflection upon the moral quality of the chemist, but it seriously hampers him in his efforts to formulate an opinion from the analytical results.

For instance, a large quantity of common salt is a cause for suspicion when found in drinking water, not because of any poisonous property attaching to the salt itself, but because it is usually difficult to explain its presence in quantity, except upon the supposition of the infiltration of sewage; yet an amount of salt sufficient to condemn the water from a shallow well in the Hudson Valley could be passed as unobjectionable if found in a deep well water from near Syracuse, N.Y. A knowledge of the history of the water is no less important in order to interpret the remaining items of the water analysis. Some time since a water was sent from Florida to this laboratory for examination, and found to contain 1·18 parts "free ammonia" per million. Much "free ammonia" commonly points to contamination from animal sources, and had it not been known that the water in question was derived from the melting of artificial ice made by the ammonia process, the enormous quantity of ammonia found would have condemned it beyond a peradventure. As it was, the water was pronounced pure, the other items of the analysis having been found unobjectionable.

Analytical results which would condemn a surface water are unobjectionable for water from an artesian well, for the reason that in the latter case high figures in "free ammonia" or "nitrates" are capable of an explanation other than that of sewage infiltration. Even though such water should have at a previous period come in contact with organic waste material, yet the intervening length of time and the great distance of underground flow would have furnished abundant opportunity for thorough oxidation and purification.

"Deep" samples taken from the same lake, at the same spot and depth, will greatly vary in analytical results if the temperature of the water at the several dates of sampling should be marked different, owing to the disturbing influence of vertical currents.

Again, suppose it is desired to determine whether or not the water of a large stream is contaminated with upstream sewage as to be unfit for a town supply. An analysis of the water taken from the site of the supposed in-take would very probably be valueless, because the enormous dilution to which the admitted sewage would have been subjected would remove from the analytical results everything of an absolute character. Examinations of any value in such should always be of a comparative nature. Samples should be taken above and below the point of contamination, and again at the proposed in-take. If the difference between the first and second samples, which is a measure of the pollution, be maintained, or nearly so, at the point of in-take, then the water should be condemned, no matter how completely the analytical results fall within the limits of the so-called standards of organic purity.

As Nichols has well said, "It is a great mistake to suppose that the proper way to consult a chemist is to send a sample of water in a sealed vessel with no hint as to its source. On the contrary, the chemist should know as much as possible as to the hint and source of the water, and if possible should take the sample himself." In taking samples for so important a matter as a town supply, the chemist should unquestionably personally superintend their collection; but for individual outlying waters, printed instructions have to be frequently depended upon. Those issued from the laboratory are as follows:—

Directions for taking a water sample:

Large glass-stoppered bottles are best for sampling, but as they are seldom at hand, a two-gallon new demijohn should be

employed, fitted with a new soft cork. Be careful to notice that no packing straw or other foreign substance yet remains in the demijohn, and thoroughly rinse it with the water to be sampled. Do not attempt to scour the neck by rubbing with either fingers or cloth. After thorough rinsing fill the vessel to overflowing, so as to displace the air, and then completely empty it.

If the water is to be taken from a tap, let enough run to waste to empty the local lateral before sampling; if from a pump, first pump enough to empty all the pump connections; if from a stream or lake, take the sample some distance from the shore, and plunge the sampling vessel a foot and a half below the surface during filling, so as to avoid surface scum.

In every case fill the demijohn nearly full, leaving but a small space to allow for possible expansion, and cork securely. Under no circumstances place sealing wax upon the cork, but tie a piece of cloth firmly over the neck to hold the cork in place. The ends of the string may be afterward sealed if necessary.

Bear in mind throughout that a water analysis deals with material present in very minute quantity, and that the least carelessness in collecting the samples must vitiate the results. Give the date of taking the sample, and as full a description as possible of the soil through which the water flows, together with the immediate sources of possible contamination.—*Engineering News.*

THE COUNTY OF DURHAM AND ADULTERATION.

MR. W. F. KEATING STOCK, F.I.C., public analyst, says:—

I have the honour to report that during the quarter ending March 31st, 1894, I have analysed 172 samples of food and drugs under the authority of the County Council. Of these, 153 samples have been submitted for analysis by the county inspectors in the following proportions respectively, viz.:—Chief Inspector B. Scott Elder, 51 samples; Inspector James Laidlaw, 50 samples; and Inspector Thomas Dunn, 52 samples. The remaining 19 samples were submitted by the sanitary inspector for the Borough of Jarrow-upon-Tyne.

Of the 172 samples analysed 11 have departed so far from the nature and quality demanded as to be classed as adulterated, giving a total adulteration of 6·39 per cent., a result which compares most favourably with the return for the previous quarter (12·44 per cent.) and the last average for England and Wales and the Metropolis (12·32 per cent.).

The number of samples analysed and the variety in the articles purchased by the inspectors—no fewer than 17 different kinds—show that the favourable result recorded above has not been produced by any want of vigilance. On the contrary, facts to be presently mentioned go to prove that it is the direct product of consistent official supervision.

The articles returned as adulterated include milk, spirits, butter, cheese, ground ginger, cocoa, and drugs, 7 in all.

MILK.—Out of 35 samples only one was found to be below the quality of genuine new milk. This sample (No. 164 in the Schedule) was deficient in natural fat to the extent of at least 8 per cent. Proceedings were instituted against the vendor, and the defence was, to say the least of it, conducted on somewhat original lines. In the first place my analysis was contested and the sample was sent up to Somerset House for a check analysis. The Somerset House certificate confirmed my own, and then a written warranty was put in—as I believe quite out of order—and the case was dismissed.

SPIRITS.—42 samples have been analysed, and of these five contained extraneous water in proportions varying from 5 to 30·88 per cent. But besides these there were six other samples classed as "Doubtful," wherein extraneous water was detected in proportion lower than 5 per cent. The latter cases await the Committee's consideration.

BUTTER.—34 samples have been analysed, and one sample only was adulterated. It contained 75 per cent. of fat which was not butter fat. None of the samples contained an excessive amount of water, and, judging from the samples of butter which have passed through this department during the last twelve months, the county of Durham may be congratulated upon its butter supply.

CHEESE.—Out of eight samples one was adulterated. I found that it contained lard oil in place of the natural butter fat. I learned afterwards that the article was called "oliene cheese." The vendor, however, omitted to make that fact patent to the purchaser, and was in consequence mulcted in a penalty of 31s. and costs.

IRVEN BROTHERS,

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"LI-VER" Brand of Lard.

GROUND GINGER.—Seven samples have been analysed, and one was found to contain 30 per cent. of "exhausted ginger." Exhausted ginger is practically a waste product of the ginger-beer manufacture. It is fortunate that whilst ginger root is under manipulation for the extraction of the delicate aroma so pleasant to the palate of the ginger-beer drinker, it loses other constituents which are tangible to the art of the chemist, and I have found it possible by careful experiment to speak to the presence of this exhausted material in admixture with great certainty.

COCOA.—Three samples have been analysed, and one was found to consist of 50 per cent. cocoa, 35 per cent. sugar, and 15 per cent. of starch other than cocoa starch. This sample (No. 168 in the Schedule) was the subject of very interesting legal proceedings. It was sold under a label as provided by the Act, but it was contended by the purchaser that the label was deceptive, because it claimed for the sugar and starch properties which they did not possess. A conviction was obtained, but was followed by an appeal to quarters sessions. The appeal was unsuccessful, and the conviction was upheld. This case, the first of its kind in the county, I believe, is, to my mind, of great importance, as tending to show that, whatever protection the Food and Drugs Acts afford to a trader in the sale of a declared admixture, they do not protect him in the act of selling that admixture if the terms of the label are fraudulent.

DRUGS.—Ten samples have been analysed, and one has been found not to correspond in quality with the description under which it was sold. This was a sample of "Liquorice, Linseed, and Chlorodyne Lozenges" (No. 75 in the Schedule). I found that the sample was devoid of morphia—one of the essentials of true chlorodyne. Proceedings were taken, and I am informed by the inspector (Mr. Laidlaw) that doctors and pharmaceutical chemists were heard on both sides. The case was eventually dismissed, apparently on the ground that morphia is not an essential of the word chlorodyne. Personally, I entirely disagree with that view. I have inquired widely of pharmaceutical chemists of repute as to the composition of chlorodyne, and in no instance have I been told that morphia could be omitted. I am of opinion that the use of the word chlorodyne on a lozenge suggests an effect which is not got without morphia, and I beg to suggest to the council the advisability of a question being addressed to the medical council as to what constitutes chlorodyne. It is easy to perceive that an unauthorised person selling lozenges containing morphia, which is a poison, is open to penalties in another direction. It is also easy to perceive that a person taking chlorodyne lozenges or chlorodyne under medical advice should not be left open to mischance by the misapplication of a name.

Mr. B. Scott Elder, chief Inspector Food and Drugs Acts, says respecting the above:—

"Many of the samples have been purchased from itinerant vendors in the public markets, and in one instance, where adulterated cheese was sold, very considerable difficulty was experienced in finding the offender, he being a resident in another county. Eventually, however, a fine of 40s., including costs, was inflicted."

The case of Elder v. Smithson, which, on appeal to the Queen's Bench Division, was remitted to the magistrates for them to convict the defendant, has been finally disposed of, and a mitigated penalty of 5s. and costs imposed.

It affords me pleasure to report that the Durham City Authorities have resolved to carry out the provisions of the Food and Drugs Act, so that, without exception, the residents in every part of the county are now under the protection which the Acts are calculated to afford.

There has been abundant evidence during the quarter that the recent vigorous administration of the Adulteration Acts is having the desired effects. The Houghton and Seaham Harbour Petty Sessional divisions may be instanced. Last year, no less than 34 per cent. of the articles purchased in the one division, and 25 per cent. of those purchased in the other, were found to be adulterated, while this quarter, out of a large number of samples from both divisions, it was not necessary to institute proceedings in a single case.

In addition to the prosecutions referred to in the Margarine Tables, there have been three prosecutions under the Margarine Act, and substantial fines have been inflicted in every case—in one case £2, including costs. Your inspectors continue to exercise vigilance in detecting offences, and the opportunities they have while on their visits of inspection of weights and measures afford the means of materially checking attempts to infringe the Acts.

I have received an application from the three permanent assistants to the inspectors for an alteration in the manner in which their travelling expenses are paid. At present they have 4s. per night when away from home. They point out that on many occasions they are on duty from early morning till late at night, without any allowance for overtime or the incidental expenses which are necessarily incurred, and they respectfully ask that the allowance be divided into 1s. 6d. per day and 2s. 6d. per night. The application will be laid before you.

OFFERING DISEASED SALMON FOR SALE.

At the Town Hall, Carlisle, Percy Bewley, fishmonger, Market-place, was charged with having in his possession two pieces of salmon unfit for the food of man exposed for sale in his shop and intended for the food of man, on April 17th.—The Town Clerk appeared in support of the information, and Mr. Broughton defended the accused.—Mr. Collingwood read the 116th and 117th sections of the Public Health Act, under which the information was laid, and which provide that a fine of £20 can be imposed in respect of each piece of fish.—C. W. Hill, sanitary inspector, deposed that on April 17th he visited the defendant's shop with Inspector Nicholson to examine some fish. The salmon in two pieces was on the slab, and a piece of another fish was lying on a table near the slab. He seized the fish, and the two pieces made a whole salmon minus the head. The third piece, a salmon steak, was not seized. The medical officer condemned the fish, and it was destroyed by a magistrate's order. The head of the salmon appeared to have fallen off. In a subsequent conversation with defendant, Bewley asked him if he thought he would be prosecuted, and whether it would get into the papers. Bewley also said he was a new starter and did not know he was doing wrong.—Cross-examined: The fish did not stink. It had apparently been killed about three days. The disease had penetrated the flesh about an eighth of an inch.—Inspector Nicholson corroborated Mr. Hill's evidence. He added that earlier in the day he saw the fish in defendant's shop, and noticed it was badly diseased. He told defendant it was a very bad fish, and advised him to put it out of the shop for the sake of his trade. Defendant replied that he did not care; it would "make a test case," and "the others would assist him in it." Subsequently witness went to the defendant's shop with the sanitary inspector, who had sent for him.—Cross-examined: It was a clean fish, but his opinion was that it had never been killed.—Re-examined: By the expression "clean" he meant an unspiced fish.—Mr. Brown, medical officer of health, deposed that the salmon was badly affected with the fungoid disease. He pronounced it unfit for human food, and he had no doubt it was so.—Cross-examined: He was a customer of the defendant's (laughter)—and had never had to complain of fish supplied to him.—For the defence, Mr. Broughton contended that only one piece of the fish was exposed for sale, and that it had never been proved that this kind of fish was unfit for human food. He called the defendant as a witness, but the clerk ruled that he was not competent.—Robert Thirlwell, Albion Hotel, Botchergate, deposed that he had had 10 years' experience as a fish dealer. Half of the defendant's fish was going to be salted for witness. In his opinion the fish was quite fit for human food. Half the fish came to Carlisle without the heads so as to save carriage.—Cross-examined: He knew the Bewleys well. He first saw the fish on Monday morning. A farmer then had it. (Laughter.) He did not know where the farmer lived.—(laughter)—but a good many farmers hawked salmon. Witness bought the fish at 1s. per lb., and commissioned Bewley to salt one half of it and try and sell the other half.—Anthony Frame, employed by Mr. Rule, deposed that he had been 17 years in the fish trade. He saw this fish on April 17th. The same sort of fish was sold all over the kingdom. (Laughter.)—Cross-examined: He was one of those who would assist the defendant. Witness would set his opinion against that of the doctor.—John Bewley, uncle of the defendant, deposed that he had the business for 13 or 14 years. It was a common practice for diseased salmon to be sold. He had sent tons of them to fish merchants, and he had sold many a score of pounds to the medical officer. (Laughter.)—The Mayor intimated that the Bench considered the case proved, and the defendant would be fined £5 and costs.

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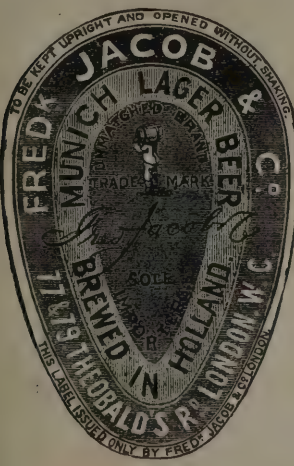
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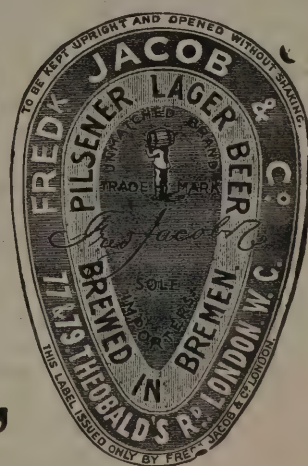
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SUGAR ADULTERATION.

IMPORTANT WARNING TO THE TRADE AND THE PUBLIC.

AT Chippenham Petty Sessions, Jane Pearce, grocer, Corsham, was summoned for selling dyed sugar crystals instead of Demerara sugar, as demanded; on March 15th. Mr. Bevir prosecuted on behalf of the County Council. Walter Hunt, a boy, stated that at the request of Mr. Ward, inspector, he went into the defendant's shop and asked her for half a pound of Demerara sugar, for which he paid one penny. Mr. Ward came into the shop while he had the sugar in his hand. James William Ward, son of and assistant to Inspector Ward, stated that he took possession of the sugar, and that it was purchased for analysis. He divided it into three parts, and left one with the defendant, who offered to exchange it for real Demerara. James Ward, inspector, produced the certificate of Mr. Gatehouse, analyst, stating that the sample contained 100 per cent. of dyed sugar, which was not Demerara sugar at all, but known in commerce as "Yellow Crystals." By Mr. Keary: The difference in price was 3s. per cwt. The defendant said she asked the boy which he would have, and he selected the cheaper one. The boy Hunt was recalled, and having admitted this the Bench dismissed the case.

Thomas Harding, grocer, Corsham, was summoned for a like offence. In this case the evidence for the prosecution was the same, a similar quantity of sugar having been supplied to the boy Hunt when he asked for Demerara. The defendant said that the people called the moist crystals Demerara sugar, which could be purchased at the same price as the crystals. Mr. Bevir said that that explained the object of the prosecution. The County Council was determined that the people should be supplied with the genuine article, and not an improper article. In this case the Bench imposed a fine of 20s., including costs.

Henry Spackman, grocer, Corsham, was also summoned for a similar offence. Hunt stated that he asked a young man in the shop for half a pound of Demerara sugar, and he paid 1½d. for the article with which he was supplied. He made other purchases for Mr. Ward, who came into the shop, and he handed the things over to him, including the sugar. The defendant: Did you ask for Demerara sugar? Witness: Yes. The defendant: I was told you asked for brown sugar. By Mr. Bevir: I am quite certain I asked for Demerara sugar. James William Ward, assistant inspector, stated that while he was in the shop the defendant came into the shop and went out again. He understood that the young man who served the boy with the articles was a son of the defendant. He asked him if he would have the sugar divided, and he replied that he supposed that that was the legal way. The sugar, which he informed him was for the purpose of analysis, was then divided in the usual way into three parts. He had since seen the defendant and had had some conversation with him about sugar, and he said he could not think how his son went to the wrong drawer. The defendant remarked that Mr. Ward sympathised with him, and he looked upon his remarks as an incentive to a tip. The Bench disapproved the defendant's opinion of the motives of the assistant inspector. By Mr. Bevir: You have never had a tip? —I have never had a tip in my life. James Ward, inspector, produced the certificate of analysis, which was similar to those in the previous cases. The defendant said he had never sold any quantity of yellow crystals for Demerara in his life. The assistant inspector, recalled, said Ernest Spackman was present when he wrote on the parcel produced containing a portion of the sugar then purchased the words "Demerara sugar." The defendant said yellow crystals was not his class of trade, and he simply kept it for those who wanted a cheap sugar. He sold 20 bags of Demerara to one of crystals. Ernest Spackman deposed that the boy asked him for half a pound of brown sugar. He thought he wanted a cheap sugar, and he gave him over half-a-pound weight to make up the value of the 1½d paid. They did a high-class trade, and not 10 per cent. of the sugar sold was crystals. Mr. Bevir observed that Hunt on the same day purchased real Demerara sugar from persons who did not do such a high-class trade as Mr. Spackman. Hunt was re-called, and said he was positive he asked for Demerara sugar, as he had special instructions from Mr. Ward to purchase it. The Bench imposed a fine of 20s., including costs. The Defendant: What is the alternative? The Chairman: One month. The Defendant: Well, if I was fifty instead of seventy I would work it out and never pay a fine. It is a most discreditable prosecution.

ADULTERATION AT LONDON RESTAURANTS.—Three restaurant-keepers were summoned at Marlborough-street on May 8th for selling adulterated articles. Mr. Ricketts, solicitor, prosecuted on behalf of the Vestry of St. Pancras.—In each case Miss Annie Davey entered the establishments, purchased the articles, and then Malcolm Grice, the inspector for the Vestry under the Food and Drugs Act, entered, divided them into three parts, and had them analysed.—Mr. Meredith, 11B, Tottenham-court-road, was fined 40s., and 12s. 6d. costs, for selling six pats of "butter," of which only 3 per cent. was butter fat.—The defence was that the stuff known as bosh butter or margarine was served by the assistant to save herself the trouble of going into the basement.—Charles Stein, 30, Charlotte-street, Fitzroy-square, was fined 20s., and 12s. 6d. cost, for selling milk with 8 per cent. added water; and Clements Bozzini, trading as Vaglio and Co., at 17, Tottenham-court-road, 20s., and 12s. 6d. costs, for selling milk 30 per cent. deficient of butter fat.

TIVERTON TOWN COUNCIL AND FOOD ADULTERATION.—A Committee reported that they did not consider any further action necessary in reference to the Food and Drugs Adulteration Act. After some discussion, a motion by Mr. Amory that it be an instruction to the officials to carry out the Act in future was lost by 13 votes to 7.

RATTRAY POLICE COMMISSION AND THE SALE OF FOODS AND DRUGS.—A letter was read from the County Clerk calling attention to section 432 of the Burgh Police Act, which transferred the jurisdiction of the sale of foods and drugs from the County Council to the Police Commission, and asking whether the Commission desired to make any change. It was agreed to leave matters in the hands of the County Council, as before.

ADULTERATION AT WIGAN.

At Wigan on May 10th, Thomas Richardson, milk dealer, Birkett Bank, was fined 20s. and costs for selling milk which was adulterated with 10 per cent. of water.—Another dealer, Richard Fairclough, was fined 10s. and costs for a similar offence.—Margaret M'Guth, Frog-lane, was summoned for selling butter which was adulterated with 70 per cent. of foreign fat. The defence was that the substance was sold as margarine. She was ordered to pay a fine of 1s. and costs.

DEADLY RAILWAY CARRIAGES.

THE filthy state in which some of our railway companies keep their carriages, gives point to the following experiments made in the laboratory of the Imperial Board of Health of Germany, between January, 1891, and July, 1892, by which the seeds of consumption were found in abundance in the dust collected, not only on the floors, but on the walls and seats of cars. Samples of dust were taken from 45 compartments of 21 different passenger cars and 117 animals were inoculated with them. Part of these died very soon thereafter of various contagious diseases before they had time to develop consumption; of the rest, killed four to six weeks after inoculation, three had tubercles. These three, however, were inoculated with dust, taken, not from the floor, but from the walls, cushions, and ceilings. Bacteria at the rate of 78,800 per square inch, were found on the floor of a fourth-class car, and 34,400, 27,200, and 16,500 per square inch on the floors of the third, second, and first class cars. Thus, even in the latter, the average passenger, who usually has at least half a compartment to himself, say 3,000 square inches of floor, has an army of 49,500,000 deadly enemies aiming at his vitals on the floor alone, to say nothing of other millions in front and rear, on both flanks and overhead. It would seem impossible to escape; but the Board of Health is said to have reported measures for removing or reducing the danger, which the railroads are considering. We should like to see the results of analogous experiments made, for example, with dust collected from London Chatham and Dover carriages.

TOO MUCH SCIENCE IN THE BEER.—A good tale is told of the late Professor Tyndall about the time he was a master at Queenwood College, Hants. The village innkeeper had a capital tap of home-brewed old-fashioned ale, which the educational staff much fancied. Years passed on, but the scent of the roses remained, and when the Professor ran over to look once more at his starting-point in life, he went down for a glass of the well-remembered brew. "Simpkinson," said he, after a delicious draught, "I never had any beer like yours since I went away." "No, sir, nowadays they puts too much science into beer, 'stead of malt and hops."

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CORRESPONDENCE.

STARCH IN YEAST.

To the Editor of FOOD AND SANITATION.

SIR,—My attention has been called to the report of a case in the Ystrad Police-court, near Pontypridd (where a dealer was prosecuted for selling yeast adulterated with 20 per cent. of starch), and to the extraordinary evidence given by Mr. Jago.

Mr. Jago stated that "when 20 per cent. of starch is mixed with yeast it replaces water to the extent of 12 or 15 per cent., and that the addition of this quantity of starch would increase the weight of the original pure yeast by only 5 per cent.

That this is not at all the fact anyone may satisfy himself by a simple experiment. Take four ounces of pure yeast of the usual consistence, and add to it one ounce of potato starch (farina). Knead these well together, and the result will be five ounces of yeast, containing 20 per cent. of starch. But it will be found that these five ounces consist of a dry crumbly mass which would soon heat and spoil. In order to bring this adulterated yeast back to the consistence of the original yeast, a notable quantity of water must be added, so that the resulting weight will be something over five ounces. From this experiment it is evident that not only does the starch not replace water, but it permits, and indeed absolutely requires, the addition of more water, and so far from the addition of 20 per cent. of starch increasing the weight only 5 per cent., it adds the whole of its own 20 per cent., and also the weight of the additional water required, say about another 5 per cent.

As the result of a long and active experience in the manufacture of yeast (the present British yeast industry was due to my initiative), I say, unhesitatingly, that the addition of starch does not in any way improve yeast from any point of view, but is an adulteration pure and simple.

The statement that the starch used by the yeast manufacturers cost 6d. per lb. is quite untrue. I have never known the price to exceed 2d., and generally it is not much above 1d.

The statement that there is no such thing as pure yeast, because all yeast contains water, is a mere quibble. Yeast contains a certain amount of water, which is necessary to its constitution, and the quantity of water which it contains can be varied only within very narrow limits.

The loss of 1 or 2 per cent. will cause the yeast to become dry and crumbly, and liable to heat, while the addition of 1 or 2 per cent. more than that which is normally present will make the yeast soft, sticky, and unmanageable. By a pure article of food, we understand that which is supplied in its natural state without wilful admixture of other substances. A pure wine contains water, but that is no reason for adulterating it with all sorts of things.

I do not at all agree that, because baking powder is not food, therefore yeast is not an article of food either. Baking powder is mainly a mixture of tartaric acid and bicarbonate of soda, neither of which can be looked upon as food. Yeast is a very different thing. It is a highly nitrogenised substance, somewhat resembling white of egg in its composition, and is capable of complete, or almost complete, assimilation by the body. That it is used in small quantities only does not affect the question. That is only a matter of degree. Pepper and mustard are used in small quantities, but are unquestionably articles of food. Moreover, pepper and mustard, ground or unground, contain unavoidably notable proportions of water. Consequently, according to Mr. Jago, they are never pure, and their admixture with cheaper materials is justifiable.

To sum up, starch cannot replace water, but, on the contrary, requires the addition of more water. Those additions increase the weight of the yeast by their own weight. The added water and starch are, weight for weight, far cheaper than the yeast, and are an adulteration added for no other purpose than to reduce the cost of what is unquestionably an article of food.—I am, Sir, your obedient servant,

Rome, April 25th, 1894.

W. S. SQUIRE, Ph.D.

A PERFECT SOAP.

SENALIA.—Under this fancy name the Jeyes' Company have recently introduced a toilet soap, which for purity and delicacy of perfume is claimed to surpass all others in the market. It is "triple-milled," super-fatted, and is manufactured by the most approved process, and is made from the purest materials only. The soap should find its way into every household, since it is sold in boxes containing four tablets at 2s. per box only.

SEWAGE AND WATER ANALYSIS.

THE Society of Chemical Industry, Scottish Section, had a meeting in Glasgow on May 1st, at which Dr. Clark presided. After some routine business, a paper on "The Suitability of Water for Dietetic Purposes as shown by Chemical Analysis" was read, being the production of Mr. R. R. Tatlock and Mr. R. T. Thomson in collaboration, as the result of experiments carried on over a series of years. The paper referred specially to contamination arising from sewage, and began by giving the analysis results of samples of Glasgow sewage taken hourly over a period of one day from outfalls in the east end and south side. It set forth the composition of sewage in respect to albuminoid ammonia and free ammonia. The relative presence of these in a sample of water, and their ratio to each other, were points of the first importance, not only in proving that the water had been injured by the admixture of sewage, but also as a means of measuring the amount of sewage the contaminated water contained. The detection and estimation of nitrates and nitrites were also matters of great importance. Messrs. Tatlock and Thomson's series of experiments included the analysis of hundreds of samples of water used more or less for drinking or dietetic purposes. One conclusion arrived at was that no sample under analysis was free from suspicion which was found to contain more than 0.02 of free or saline ammonia per gallon, or its equivalent in nitrates, that being permissible only when a high percentage of albuminoid ammonia was due to the presence of vegetable matter. The value of the "oxygen absorbed" and of the chlorine was also dealt with in the paper, leading to the conclusion that the latter was of no value at all, notwithstanding the reliance that had been so largely placed in it as a test. Reference was made to the analysis of samples taken from deep bores, where it was almost impossible to believe in the intrusion of sewage contamination. Wherever analysis found matter, which might be held as traceable to "previous sewage contamination," they felt themselves bound to condemn that water, unless it could be absolutely proved from an inspection of the district from which the samples were taken that no sewage contamination was possible. The paper was re-inforced by several tables of analyses, which were not read in detail, but quoted as occasion required by the reader, Mr. Thomson.

DURING the first quarter of this year 25 samples were purchased for analysis in Huddersfield. Only two were adulterated.

IN Dublin during March, the number of analyses were 105; number of articles of food adulterated, 26; quantity of unsound food destroyed, 54,184 lbs.; convictions under the Margarine Act, 4; amount of fines imposed, £22; convictions for selling adulterated food, 9; amount of fines imposed, £23; total amount of fines imposed during the month for above offences, £45.

SOUTHWARK.—At Southwark police-court on Thursday last Mr. Riley, a member of the Sanitary Committee of the St. Saviour's Board of Works, was summoned by the authority of which he is a member for not complying with certain notices to put a house of his adjacent to the Blackfriars-road in a condition fit for habitation. The defendant did not appear, and after going into the facts Mr. Slade inflicted the salutary penalty of £20 and costs, and ordered the premises to be closed.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

OFFICIAL ADVERTISEMENT.

BOROUGH OF JARROW.

TENDERS are invited for the supply of the following Disinfectants for a period of twelve months, viz.:—

Carbolic Powder (in half-ton lots, quote per cwt.).

Sulphur Cakes (quote per cwt.).

Soluble Disinfecting Fluid (in bulk, 42 gallon casks, quote per gallon).

4 oz. bottles Disinfecting Fluid (per gross).

Soap (per cwt., in lb. bars).

Tenders (with samples and guaranteed strength) to be sent to the undersigned, marked "Disinfectant," before Saturday, June 2nd, 1894.

W. S. DAGLISH, *Town Clerk.*

Food and Sanitation.

SATURDAY, MAY 26TH, 1894.

PARLIAMENT, ADULTERATION, & SOMERSET HOUSE ANALYSTS.

IN the course of a very interesting interview which our vigorous and useful contemporary *London* published last week, and which we reprint in another column, Mr. Kearley uttered some breezy and sensible remarks upon the idle, ignorant, useless Board of Trade and incapable Somerset House analysts. Our readers will be gratified to know that there is, at last, one member of the House of Commons who has determined to seriously grapple the great question of adulteration, and who realises how it affects our national prosperity. When we began this journal nearly two years ago, it seemed hopeless to attempt to arouse Parliament, local authorities, or even the penny dreadful daily press to a realisation of the enormous importance of the subject. No member of the House of Commons knew or cared a rap about the question, which is strange, because at the very root of the decline of agricultural prosperity, and that rapidly hastening decay of leading industry after industry, is this subject of adulteration and evasions of the Merchandise Marks Act. Our efforts to make the vastness of the injury done to the trade of the United Kingdom by swindles in food and other stuffs known have necessitated the use of language at times as strong as our arguments; of exposing supposedly "great reputations" of the humbugging Mundella type, of single-handed turning a press searchlight upon Somerset House, and showing it to be a disgrace to science, to be blundering, mischievous, incompetent, and the cause of a loss to English trade of millions of pounds per year, and of thousands of "out of works" starving or being in gaol, or upon the parish. It is owing to their ignorance and folly that Londoners are swindled of £890,000 per year in milk alone; that Denmark has increased its butter exports to the United Kingdom from a few thousand pounds weight twenty years ago to between eighty and ninety million pounds weight to-day. It is owing to useless intriguing incapables like Sir Algernon West, as well as to these same Somerset House chemists, that beer is made so largely from rice and sugar that we do not grow, and that our whiskey is Indian corn and imported potato-spirit, ruining barley growing, throwing thousands of labourers out of work, and giving such as find some work practical starvation in the off months, that when beer was the product of malt and hops found them employment in malting. We have striven hard to bring these plain practical questions into public prominence. Our two years' efforts have led to

some thousands of extra samples being analysed and to local bodies that neglected the Acts putting them into force. We can congratulate ourselves upon the fact that upon all sides of us interest is increasing in adulteration and the Merchandise Marks Act, and it may yet, as it certainly ought to, be a really great national benefit that this pressing big question has been taken up by a Member of Parliament who can speak with some authority upon it. We hope he will not be long without a following. He ought not to be if there are in the House of Commons business men with brains or agricultural representatives having the capacity to see an inch beyond their noses.

MR. RECKETTS DETECTS ANOTHER WRONG SUMMONS.

AT the Thames Police-court Jenkin Morgan, milkman, 35, Ben Jonson-road, was summoned for selling milk deprived of 28 per cent. of cream.—Mr. Recketts, who appeared for the defendant, took a preliminary objection to the wording of the summons. He said it had been taken out under the 6th section of the Act for selling milk to the detriment of the purchaser instead of under the 9th section, when he should have been charged with selling milk deprived of cream without due notice to the buyer. The case of "Naylor v. Collins," decided in the Court of Queen's Bench, was exactly on all fours with the present case, except that the subtraction of cream was 60 per cent. instead of only 28 per cent.—Mr. Mead, after looking at the case which Mr. Recketts had cited, held that the summons was wrongly issued, and dismissed it.

AN INTERESTING MILK CASE.

WHAT IS THE STANDARD?

GEORGE YATES, a dairyman, of Whitton-road, Hounslow, was summoned to the Brentford Petty Sessions, on May 7th, by Inspector Tyler for having sold new milk from which 30 per cent. of fat had been extracted. Mr. C. Robinson appeared for the defendant.—Edward Watkins, assistant to Mr. Tyler, said on the 12th ult. he went to the shop of Mr. Yates, Whitton-road, Hounslow. He saw Mrs. Yates, and asked her for a pint of new milk. She served him from a pan on the counter marked "Hounslow Dairy," and he paid her twopence. He then handed the milk to Mr. Tyler.—To Mr. Robinson: It was about four o'clock in the afternoon. There were about two quarts in the pan. The pan held about nine or ten quarts.—Mr. Walter Tyler, inspector of weights and measures for West Middlesex, deposed to receiving the jug from the last witness containing a quantity of new milk. The usual division took place, and one part was sent to the public analyst. To Mr. Robinson: He could not say if the milk was morning milk. He saw the defendant's wife, but she did not say it was morning milk. He did not sell cream to his knowledge. If milk was continually dipped from a pan he would expect it to show a deficiency of fat, and it was his experience that the milk was so affected. Warm weather would also have an effect on the milk, and it was a very warm day.—Mr. Robinson submitted it was a matter for the analyst to make up his mind what the proper standard of milk should be, and presuming that this milk was of a poor quality in consequence of the amount given by the cow and the continually dipping from nine until four o'clock, it would no doubt depreciate; 30 per cent. of abstracted fat was not a serious amount and was not like adding water, for he contended that a third of the cream had been taken out by continual dipping. The Act was not intended to keep persons from selling milk from a pan as in this case, but it was to keep persons from selling skimmed milk for new. He would call the defendant, and if necessary his wife, and their evidence would show that there was not wilful abstraction of the cream.—The defendant was put into the box and said the milk was obtained from one cow, which gave about 23 quarts a day. A cow which gave so much would not give so much cream as one which gave a smaller amount of milk. He milked the cow himself and strained the milk into the pan from which it was served. He had not a dairy, and did not sell cream or skimmed milk.—To the Bench: He kept 15 cows.—To Mr. Tyler: By his evidence he meant to imply that the cause of the absence of cream was because of the poor milk from the cow.—The case was dismissed.

At Worship Street, on May 13th, Charles Bennett, shopkeeper, of Sewardstone-road, Victoria Park, was summoned for selling "butter" which was 85 per cent. margarine.—The prosecution was instituted by the Sanitary Authority of Bethnal-green, the inspector, Mr. Weston, sending a man into the shop to make a purchase at 1s. per lb.—Mr. Bushby fined the defendant £17 and costs.—Emily Telford, of Approach-road, was fined £18 and costs for a like offence; Arthur White, of Bonner-street, was fined £15 10s. and costs; E. Embleton, also of Bonner-street, £12 and costs.

WIGAN AND ADULTERATION.

AT Wigan on May 10th, Thomas Hodge, of Standish Hall, was summoned for selling, to the prejudice of the purchaser, milk which was adulterated with 3 per cent. of water, and from which it was also alleged 10 per cent. of cream had been extracted. Mr. Cowburn prosecuted on behalf of the Corporation.—Mr. Sumner, sanitary inspector, gave evidence that he purchased a sample of milk from the defendant's son in Darlington-street East on Sunday morning, April 22nd. He submitted a portion to the analyst.—The case for the defence was a complete denial. A certificate from Dr. Campbell Brown, of Liverpool, was put in, but the case was adjourned until Monday week, in order that the doctor might be called as a witness. Permission was given by the magistrates for the Corporation to obtain an analysis from Somerset House.

Mary Magrath, 68A, Frog-lane, was summoned for selling butter which was adulterated with 70 per cent. of foreign fat.—Mr. Cowburn prosecuted for the Corporation, and Mr. Sumner, the sanitary inspector, proved the case. He said that he visited the place on April 6th, and took a sample, purchasing half a pound of butter, which was afterwards submitted for analysis, with the result as on the summons. The defence was that it was margarine, and sold as such, but as there was no label attached to the paper by which it was delivered, a fine of 1s. and costs was imposed.

Thomas Richardson, milk dealer, of Birkett Bank, was summoned for selling milk to which it is alleged 10 per cent. of water had been added. Mr. Cowburn prosecuted for the Corporation, and Mr. James Wilson defended. Inspector Sumner gave evidence that he took a sample on the 22nd ult., and submitted it to the borough analyst. Mr. Orsman deposed that he found as a result of his analysis, 10 per cent. of added water. The defence as presented to the Bench by Mr. Wilson was that the defendant was in no sense to blame for the adulteration. The milk was purchased under a warranty from the Brimelow Farm, and he thought they would be satisfied that the defendant had done all he could to keep himself out of the clutches of the law, and to conduct his business in a straightforward manner. He showed the written guarantee to Mr. Sumner, who read it over and said it seemed all right, and previously he had taken a sample of milk to Mr. Sumner's office and said that if there was any doubt as to the purity he would cease buying it from the farm. Mr. Sumner recommended him to have it analysed, but that was not done on the score of expense. Mr. Cowburn contended that the document produced was an agreement for sale and not a warranty. There were cases decided on the point. A fine of 20s. and costs was imposed. Mr. Rookcroft said that the Bench considered it would have been better if he had taken the advice of the inspector and got the milk analysed.—Richard Fairclough, Scot-lane, Aspull, was also summoned for selling milk adulterated with water. Mr. Wilson, who appeared for the defendant, said that the milk was the same as in the last case, as it was purchased from Richardson. Inspector Sumner said that on April 22nd he purchased a sample from the defendant, who said at the time that he was not sure that the milk was right, as he had purchased it from Richardson. Mr. Orsman, the borough analyst, said he found from analysis that 15 per cent. of water had been added to the sample, and 10 per cent. of cream abstracted. The water added was impure and not good. It was water that he would condemn for drinking purposes, supposing it had been submitted for analysis. The water was just the same in Richardson's case. Mr. Wilson said that was proof that it was purchased from Richardson, and neither the latter nor present defendants were to blame for milk which was adulterated before it reached them. Mr. Worthington said that the Bench were inclined to draw a distinction between the two cases, as the defendant had got it second-hand. Still they were determined to put a stop to the practice of selling impure milk. He would be fined 10s. and costs.

ST. ASAPH AND TOO LATE SUMMONSES.

ELIZABETH DAVIES, of Brynecastle, Rhuddlan, was charged under the Food and Drugs Act, with selling milk from which less than 47 per cent. of cream had been deprived, on the 19th of March. Mr. Gamlin, solicitor, Rhyl, appeared for the defence, and raised a technical objection. He said that by the 10th section of the Act, it was necessary that the summons should be issued within a reasonable time, and in the case of a perishable article, within 28 days. In this case the summons was not served until nearly 34 days afterwards. Inspector Williams said he could not serve the summons until he had the analyst's report. John Owen Evans, a lad 14 years of age, said that on the 19th of March, acting on the instructions of Inspector Williams, he purchased twopennyworth of milk from the defendant. He handed the milk to Inspector Williams. Police-constable Parry proved serving the summons on April 20th. The chairman, Major Birch, said the Bench were compelled to say that the inspector as prosecutor was out of court in the face of that evidence. No doubt the inspector had done what was right. The Bench dismissed the case, upholding the objection.

CHARACTERISTICS OF AMERICAN ADULTERATION.

INSPECTION OF FOOD AND DRUGS IN MASSACHUSETTS.

THE following summary presents the results of the examinations of food and drugs by the State Board of Health in the month of March:—

ARTICLES EXAMINED.	Number found to be of good quality.	Number adulterated or varying from the legal standard.	TOTAL.
Milk,	188	203	391
Butter,	50	0	50
Cheese,	1	0	1
Lard, ... ..	...	...	...
Olive Oil, ... ..	...	...	...
Vinegar,	1	7	8
Spices,	89	8	97
Cream of Tartar,	29	0	29
Molasses,	15	2	17
Syrups,	1	0	1
Maple Sugar,	9	1	10
Maple Syrup,	8	1	9
Canned Goods,	5	2	7
Honey,	7	1	8
Tea,	9	1	10
Coffee,	3	3	6
Cocoa,	1	2	3
Confectionery,	3	0	3
Other articles of Food and Drinks,	7	0	7
Drugs,	22	16	38
Totals	448	247	695

Percentage of adulteration, 64.4. The actual ratio of adulteration is very much less than this, since it is only suspicious articles of food to which the attention of the Board is directed. Certain staple products, such as sugar, flour, and the various other cereal products, are very rarely adulterated, and require but little inspection. The work of the Board is, therefore, mainly devoted to the inspection of such articles as it has found, by several years of experience, to be especially liable to adulteration.

The ratio of samples of milk found to be below the standard was 50.6 per cent. Of the whole number, 148 samples had between 12 and 13 per cent. of solids.

Four complaints were entered in the courts during the month for violation of the laws relative to the inspection of food and drugs, two of which resulted in conviction and two were put over until April 5. All of these were for violation of the laws relative to the sale of milk. One hundred dollars were paid in fines.

The samples of drugs found to be adulterated were chloroform, powdered opium, and tincture of opium.

The cities and towns from which samples of food were collected were Boston, Worcester, Lowell, Cambridge, Somerville, Salem, Brockton, Chelsea, Malden, Newton, Gloucester, Waltham, Quincy, Everett, Marlborough, Woburn, Brookline, Medford, Hyde Park, Avon, Dedham, Natick, North Reading, Randolph, Winthrop and Revere.

WEST SUSSEX COUNTY COUNCIL AND THE ADULTERATION OF LARD.

THE report of the Sale of Food and Drugs Acts Committee was received and approved. Mr. Otto Hehner, the county analyst, had sent in his quarterly report to the committee, which, in view of the recent prosecutions for adulteration of lard, is of considerable importance. Mr. Hehner says that lard, and beef-stiffened lard such as that which formed the subject of recent prosecutions, are quite different things. Genuine lard has always been and still is made, especially by English refiners, from "selected parts of the fat of the pig, namely, those which when properly melted out yield a fat of sufficient consistency to be useful for culinary purposes. In the huge pig abattoirs of America, however, the whole of the fat of the pig is melted down for lard, the result being a very soft and often almost fluid fat of much larger yield, and consequently of cheaper price and of little use for cooking." It has, said the analyst, to be stiffened with beef stearine before it can be put on the market. It is wholesome, but it is not so good or so expensive to make as lard, and to sell it as lard is to defraud the public and to injure the English producers of the genuine article. "In many respects the mixed lard may be compared with margarine, is a meritorious substitution for butter, but when sold under the name of butter, a fraud."—The Rev. John Goring said that evidence on the subject went to show that it was next to impossible for anybody in the country to get pure lard at all. He suggested that a deputation from the Council should make representations to the proper department of the Government in the matter.—Earl Winterton, the Earl of March, Mr. Wilberforce and Mr. Innes took part in a discussion which followed. Ultimately the following resolution was carried *nem con.*: "This Council is of the opinion that the facts as to adulteration disclosed in this and previous reports of the county analyst should be brought to the notice of the department of Government responsible for such matters, and that the clerk of the Council be directed to convey this resolution to the County Councils Association with a view to joint action being taken in the matter, and send a copy to the other County Councils."

WHAT IS THE STANDARD FOR BUTTERMILK?

AT Coleraine, Sergeant Love, R.I.C., inspector under the Food and Drugs Act, summoned Jas. Stewart, Kilgrain, for having sold to complainant's prejudice three pints of buttermilk adulterated with water, contrary to the statute. Mr. W. J. Smith defended. The complainant stated that he purchased three pints of buttermilk on the 24th March last from defendant's son, to whom he stated that he wanted it for the purpose of analysis. He sent a sample to the public analyst in Derry (Professor Leebdy), and now produced his certificate to the effect that the buttermilk was adulterated with 25 per cent. of added water.—To Mr. Smith: There was no standard of adulteration laid down by the Act for the purpose of churning. Witness was not aware that the analyst for Dublin (Sir Charles Cameron) allowed 25 per cent., or that the same percentage was allowed by the Derry magistrates.—Mr. Smith quoted several decisions—one in Dublin and another in Derry—where the defendants were not convicted, although the adulteration was more than 25 per cent. The Coleraine magistrates also had recently dismissed a case where the adulteration was 25 per cent.—After some discussion the case was dismissed without prejudice.

MARGARINE IN GLASGOW.

BEFORE Sheriff Birnie, in Glasgow Sheriff Court on May 14th, a number of persons were fined for selling margarine without having the necessary label duly affixed to it. Among them were John Forgie, grocer, 421, Garscube-road, and Robert Downs, grocer, 157, Garngad-road, fined £1 12s. 6d. each; Mary Burns, 187, High-street, £1 13s. 6d., of which £1 12s. 6d. were the actual expenses incurred by the prosecution; Helen Dick, grocer, 35, Cedar-street, 10s.; and Robert Caldwell, St. Rollox, grocer and provision merchant, £1 15s.; William Beattie, dairyman, 27, Cedar-street, was fined £1 12s. 6d. for selling margarine without having the word "margarine" printed on the wrapper.

BLAIRGOWRIE AND THE FOOD AND DRUGS ACT.

AT the last meeting a letter was read from M'Leish, County Clerk, drawing attention to Section 432 of the Burgh Police (Scotland) Act, which transferred the jurisdiction of the Sale of Foods and Drugs Act from the County Council to the Police Commissioners, and asking whether the Commissioners desired to take action on their own account, or whether the County authorities would act in the burgh as before.

Mr. Stewart said his impression was that the acting of the County authorities in the burgh in the past had been nil. He had never heard of a case in the burgh of drugs being analysed by the County Council.

Mr. Bell said it was not long since they were on the move in the district.

It was resolved to allow the County authorities to act as before.

ATHLONE BOARD OF GUARDIANS.

THE following is an abstract from the report of Sir Charles Cameron on the samples of milk forwarded to him by the master for analysis:—James Macken's deprived of 18 per cent. of fats or cream, and a debased article. John Finneran's deprived of 30 per cent. of fats, and a debased article. Thomas Finneran's (a new contractor) deprived of 25 per cent. of fats, and a debased article. James Doolan's deprived of 22 per cent. of fats, and a debased article. Pat Finneran's deprived of 30 per cent. of fats, and a debased article. Clerk—I suppose it will be like, case like rule, that is that these contractors will be prosecuted. Mr. Galvin said milk was not able to throw up cream now. Chairman—If it didn't how could it be extracted. Mr. Galvin—How many degrees of cream do you require? Clerk—We don't say any number. We simply say pure new milk. A prosecution in each case was ordered.

MARGARINE ACT IN DUBLIN.

AT Dublin on May 17th, Martin Cushen, 43, North Circular-road, was fined £5 for exposing margarine for sale without being labelled.—Mrs. Frances Barton, 8, Irvine-terrace, Church-road, was fined £5 on a similar charge.—John Deegan, 1, Stonybattery, was fined £5 for selling butter adulterated with 75 per cent. of fats foreign to butter.

THE GROCERS' FEDERATION AND ADULTERATION.

A DEPUTATION from the Federation of Grocers' Association of the United Kingdom waited upon Mr. Shaw-Lefevre, M.P., President of the Local Government Board, on the subject of the Adulteration Acts. Mr. Shaw-Lefevre was accompanied by Sir Hugh Owen, Mr. S. B. Provis, C.B., and the Hon. G. H. Gordon, and the deputation consisted of representatives from London, Brighton, Portsmouth, Birmingham, etc.

Sir Charles Cameron, M.P., said the deputation considered that the law in regard to warranty should be amended. It seemed to be a very great hardship that shopkeepers should be treated on a different principle from the rest of the community. They were held to sell with an implied warranty, and they contended that they should also buy with an implied warranty, and that the invoice which they received from the wholesale dealer should constitute a warranty. The Adulteration Acts had been in operation now for some twenty years, and they had been interpreted by different tribunals in a way which greatly modified the intention with which many of their provisions had been passed by Parliament. An application had already been made to the Board for an inquiry into portions of the Adulteration Acts, but the deputation urged that the working of the Acts should be considered as a whole, and that any attempt to confine the inquiry to any special set of subjects, such as dairy produce, would only result in a complication of the law.

Mr. H. Cushen (London) said the fact was that whatever adulteration took place was done not by the retailer, but either by the manufacturer or by the wholesale dealer. In practice the guilty party escaped altogether from the responsibility under the Acts. He complained strongly of the action of the Holborn District Board of Works, which had recently posted outside the Holborn Town Hall a list of convictions in 1893 with the names and addresses of the persons convicted. It was going beyond the Act to post up the names twelve months after conviction.

Sir William Pink (Portsmouth) and Mr. J. J. Holder (Brighton) also spoke.

Mr. Shaw-Lefevre said that a few days ago a deputation representing the agricultural classes in the country had asked him to assent on the part of the Government to an inquiry into the sale of margarine and dairy products. After he had consulted with his colleagues at the Board of Trade and the Board of Agriculture, the Government assented to a committee on the subject; but he did not promise that the Government itself would move for an inquiry, as it would be extremely difficult for the Government to find a day at this period of the Session for the discussion of such a motion. It seemed to him that the deputation should negotiate with the agriculturists so as to have the inquiry into the Margarine Acts and the adulteration of dairy products enlarged, in order to include the points raised by the deputation on the Sale of Food and Drugs Act. There were many and important questions raised on the sale of margarine, and he submitted to the associations whether it would not be worth their while to assent to a committee dealing with that subject alone. It was largely a question of time, and the Government could not undertake to move for a committee. He would communicate with the agricultural gentlemen to see how far the questions raised by the deputation could be amalgamated, and then they might come to some agreement.

HORLICK'S**MALTED****For Infants****and Invalids.****MILK****CONTAINS PURE MILK, WHEAT AND BARLEY MALT.****NUTRITIOUS, DIGESTIBLE.****GUARANTEED ABSOLUTELY PURE.****OF ALL CHEMISTS AND STORES.****SAMPLES FREE. 39, SNOW HILL, E.C.**

INVENTIONS WORTH KNOWING. THE NIBESTOS FILTER.

SANITARY experts have long been unanimous in condemning the use of household filters as being dirty and dangerous. For a time, it is true, they are, comparatively speaking, unobjectionable, but as the principle of construction of them all is unsanitary, they are bound sooner or later to contaminate the water passed through them and to render it more impure and dangerous to health than if it were unfiltered. There are, it is safe to assert, many thousands of households wherein filters are used that have not been cleaned for years, and in which the filtering medium, surcharged with filth, pollutes every drop of water that is put into these filthy filters. Whether they be filters claiming to remove matters in solution or merely pollutions in suspension the same objection applies—they are merely storehouses for filth, *i.e.*, water dirtiers instead of water cleansers. If we take as an example filters of the most perfect type hitherto placed before the public, such as the Chamberland filter, in which the filtration is through porous filtering media, it is claimed for these filters that they effectually remove from water all microbes. It may be that in the first few days of their use they to some extent justify the assertions of their inventors, although this is doubtful. Indeed, it is nearly nine years ago since Galippe and Bourquelot denied the alleged infallibility of such filters, and found by experiments that microbes did pass through porous porcelain. Experiments of Lacour Eymard, published in the *Revue d'Hygiene*, June, 1893, confirm Messrs. Bourquelot and Galippe in their objections. The results of introducing cultures of *Bacterium termo*, *B. coli commune*, and *Micrococcus prodigiosus*, into clean and sterilised Chamberland filters, are represented in the following table, the number of colonies per cubic centimetre of the filtered water, found at the end of the eighth to the fifteenth day respectively, being there given in columns:—

Name of Organism.	8th to 10th day.	11th day.	12th day.	13th day.	14th day.	15th day.
<i>B. termo</i>	2 to 5	24	116	—	—	480
<i>B. coli commune</i>	Few	—	8	20	24	60
<i>M. prodigiosus</i>	—	—	48	169	234	380

These filters appear, therefore, to be far from affording absolute security; and the porous cylinders should be carefully cleaned and sterilised every three days at least, and a pressure of not more than two atmospheres be maintained, to ensure even relative security.

It is thus seen that what is said to even be the most scientific and sanitary filter yet made, is not in reality a filter inasmuch as it fails in the very things especially advanced as its recommendations. An objection, too, is the one that in the course of usage the porous cylinder itself becomes charged with filth—not on the outside alone, where it can be brushed off, but inside, and impregnating the material of the cylinder itself, where it is impossible to reach or remove it. The only cure for such is a fresh cylinder, which is costly. It will be seen, therefore, that a fortune awaits the inventor of a filter that will absolutely remove microbes from water, and that cannot possibly—if it becomes filthy—pass any of the filth into the filtered water. The Nibestos filter, invented by Mr. Knight and now exhibited at 126, Charing Cross-road, London, W.C., appears to have overcome the many difficulties we have pointed out and to realise the essentials of a sanitary filter. The filtering medium is a film of asbestos so treated that when the water comes in contact with it, it pulps and forms so fine a medium that even micrococci cannot pass its surface. No impurities in suspension can pass through the film. They remain on its surface and nothing but pure water can go through. As the impurities collect on the surface the films gradually cease to act, clogging themselves up until at last no water whatever can pass through them. They thus act as automatic health alarms, informing the user that a fresh film is required, but as the films cost only 2d. each, and there is no complicated mechanism to remove or get out of order—all that is necessary being to lift off the dirty film and put the new one in its place, an operation not requiring more than a minute, and one that a child could do—the patent has a distinct advantage over any filter yet invented. The inventors have had the filters tested by Professor John Attfield, F.R.S., who, along with his son, Dr. D. Harvey Attfield, subjected them to exhaustive experiments. The results, briefly stated, show that visible and invisible suspended matters were absolutely removed.

Professor Attfield says of invisible suspended matter (microbes):—“Impure Thames water taken from the river at Waterloo Bridge was passed through the sterilised filters. Plate cultures were made before and after filtration. The various samples of Thames water before filtration contained from ten thousand to thirty thousand microbes in every cubic centimetre. After filtration neither of the samples contained any microbes whatever—no bacteria, no bacilli, no micrococci.” The invention, therefore, has so many points in its favour that we have no hesitation in pronouncing it to be decidedly one well worth knowing.

3,500 GALLONS OF VINEGAR TURNED INTO THE SEWERS.

IN consequence of the suicide of one of Messrs. Hills and Underwood's employés in one of their vats at Norwich, the liquor in the vat, comprising 3,500 gallons in process of manufacture into vinegar, was last week drawn off in the presence of reporters and discharged into the public sewers, preparatory to further cleansing operations.

A SENSIBLE PROPOSAL.

THE General Purposes Committee of the Shoreditch vestry reported that they had considered a scheme by the vestry clerk in which he recommended that endeavours should be made to amend the Sale of Food and Drugs Act by requiring the name of every milk seller to be registered with the police, and every barrow to have on it the name and address of a responsible person who should be liable in case of any abuse and that it should also be an offence to give a false name and address to an inspector. The committee recommended that copies of the report should be sent to the County Council and other bodies. It was pointed out that a good many abuses arose in connection with the itinerant vendors, who frequently gave wrong names and addresses. The recommendation was adopted.

MULLINGAR BOARD OF GUARDIANS AND ADULTERATION.

PROPOSED FOOD INSPECTOR.—The Town Commissioners of Mullingar forwarded copy of a resolution as follows:—“That the Sanitary Authority now vested in the Mullingar Board of Guardians be respectfully requested to put in force the clause appointing an inspector under the Public Health (Ireland) Act, as several well-founded complaints have been received by members of this Board.” Chairman—Complaints about what? Clerk—I don't know. Chairman (laughing)—The state of the weather, I suppose. Clerk—Or the sanitary state of the town. The Chairman said—Taking the former resolution of the Town Commissioners into consideration they meant to have an inspector appointed under the Food and Drugs Act. They had an inspector appointed under the Public Health Act and he under the 132nd Section of the Public Health Act could inspect food and could prosecute. The Clerk said the prosecution was made very simple, inasmuch as a prosecution could be undertaken before one justice, and even outside of court. It was suggested that Mr. Farrell, sanitary sub-officer should be informed of his powers. The Chairman said he had been appointed to do certain works in connection with the sanitary state of the town, and when he was appointed the duties now suggested to be placed on him were not contemplated. Mr. Sullivan said they could remunerate him for his services. There was no better man for the position than Mr. Farrell was. Mr. Scally said the former sanitary officers did not devote all their time to the position, but Mr. Farrell did. The Chairman asked if any one would give notice that Mr. Farrell's salary be increased. Mr. Scally said he would have pleasure in giving the notice. Mr. Sullivan said he would second it. Notice was then given by Mr. Scally to increase Mr. Farrell's salary to £1 per week, in consequence of the increased duty placed upon him, and the satisfactory manner in which he discharges his duty.

WATER IN BUTTER.

THE *Irish Independent* says:—The Trustees of the Cork Market have decided on an important step in connection with the question of the proper quantity of water allowable in pure butter, which has been so widely discussed recently. As a sequel to the recent prosecutions in Manchester, the merchants are now compelled to give a guarantee with every firkin of butter sent to England to the effect that it is free from added water. To enable them to give this guarantee with some degree of security the Market Trustees have ordered a testing apparatus, by which it can be readily decided what percentage of water specimens coming to the market contain. This, however, will still leave them in the position of not knowing what percentage of water is allowable, inasmuch as there is no such thing as a reliable standard to be guided by. In the absence of an official standard the South of Ireland butter trade is at the mercy of any corporate analyst in England. While this state of uncertainty prevails prices secured in England for Irish butter must be seriously affected. Even if only affected to the extent of a halfpenny in the pound it would mean a loss of over a quarter of a million annually to Munster. The only way to decide the question is by an official inquiry, conducted by a committee of analysts who would take specimens of the butter manufactured under different temperatures and in different localities throughout the butter-making counties. By this means Somerset House could be able to lay down an official standard which would save this important Irish industry from the meddling interference of local bodies in England who may be moved by agents of the Danish butter trade. Until something like this is done a state of uncertainty will prevail which must act, and is now acting, very prejudicially on the staple agricultural industry of Munster.

MR. HUDSON E. KEARLEY, M.P., ON ADULTERATION AND SOMERSET HOUSE CHEMISTS.

IN an interesting interview published in *London*, our contemporary says:—In order to ascertain the extent of the present trade in adulterated food products a representative called the other day on Mr. Hudson E. Kearley, M.P., who knows more about the subject than anybody else. Mr. Kearley has made a special study of the working—or, rather, the non-working—of the Acts, and has amassed a vast amount of information on the subject. Mr. Kearley was found in his offices at Messrs. Kearley and Tonge's, the great tea merchants and provision dealers, who occupy the whole of Mitre-square, Aldgate. The square is continually blocked with their vans, and inside the main building are the busy offices, occupied with the affairs of a business whose ramifications extend throughout the provinces and abroad. Mr. Kearley was full of this adulteration. So voluminous was the information he had on the subject that it was impossible to deal with the whole range of illicit trade in one interview. We directed our attention to one article of universal consumption which is more largely adulterated than anything else—butter. Mr. Kearley promptly plunged into the subject.

"With a firm administration of existing laws," he said, "the fraudulent trade in butter carried on between this country and the Continent could be made impossible.

"At the port of entry you can catch the guilty man. It is possible that the sender may be co-operating with a confederate here, but, after you have confiscated the adulterated goods, you can leave these two thieves to settle their own differences.

"The Board of Trade has power, under the Merchandise Marks Act, to prosecute at the port of entry. It could stamp out this foreign trade in adulterated butter, which competes unfairly with honest traders and defrauds the public, if it would only act. Let me read the section of the Act to you. Here it is, clause 2:—

"The Board of Trade may, with the concurrence of the Lord Chancellor, make regulations providing that in cases appearing to the Board to affect the general interests of the country, or of a section of the community, or of a trade, the prosecution of offences under the Merchandise Marks Act, 1887, shall be undertaken by the Board of Trade."

"To describe margarine as butter is certainly an offence under this section, and few articles of consumption affect more directly the general interests of the country or of the community. This provision should be read in connection with powers given in the Margarine Act, clause 8, which says:—

"All margarine imported into the United Kingdom of Great Britain and Ireland, and all margarine, whether imported or manufactured within the United Kingdom of Great Britain and Ireland, shall, whenever forwarded by any public conveyance, be duly consigned as margarine, and it shall be lawful for any officer of Her Majesty's Customs or Inland Revenue, or any medical officer of health, inspector of nuisances, or police constable, authorised under section 13 of the Sale of Food and Drugs Act, 1875, to procure samples for analysis if he shall have reason to believe that the provisions of this Act are infringed on this behalf, to examine and take samples from any package, and ascertain, if necessary by submitting the same to be analysed, whether an offence against this Act has been committed."

"Here we have power for our Government department to analyse, and another to prosecute—the power to punish the original offender by confiscating the goods."

"Why then isn't action taken? Why doesn't the Board of Trade cause butter to be examined as well as other goods?"

"The Board of Trade has refused over and over again to take proceedings. I have voluminous correspondence here to prove, not only their reluctance, but their absolute refusal. No, they don't say they have not the power; they shuffle and evade their responsibility. To demonstrate that existing legislation could be made effective some of us, after prodigious efforts, at last made the Customs authorities move; we told them that falsified butter was coming to this country in ship-loads, and asked them to intercept it at the port of entry. After shirking direct responsibility, by making us give a bond for a large amount, the Customs authorities grudgingly consented to act, and tested the alleged butter on its arrival in port. They sampled here different marks of butter sent forward by eight shippers, amounting in all to 29 cases, of 150 lbs. each. The whole of this was found adulterated, was condemned and confiscated. This action had a very salutary effect on the Ostend and fraudulent butter trade for a time, which shows how much good can come from a little firm administration of the law. Under pressure from us, on another occasion 200 cases of adulterated Italian butter were confiscated at Newhaven. These are the only two occasions in which proceedings have been taken. They checked, for a time, the adulterated trade, but it is now in full swing again. Margarine-making has become a great industry in France, Italy, and Belgium, and the bulk of it is shipped to this country as butter, and sold as butter. The butter industry abroad is even threatened by the margariners. In France, they have travellers going about all the districts where hand-made butter is produced for exportation to this country urging the makers to mix butter with margarine. The agents for margarine offer to take all responsibility, and make tempting offers, which are often accepted. The members for agricultural constituencies have endeavoured to get protective legislation passed in France, against

the fraudulent margarine business, but the margariners have been too strong for them. Much of the 'guaranteed pure Normandy butter' now sold here is nothing but margarine, which thus injures the country where it is produced, as well as the country to which it comes."

"So much for the sources of adulteration abroad. Is this illicit traffic, Mr. Kearley, augmented by the tricks of the trade at home?"

"Certainly, there are sources of adulteration at home in the distributive channels—the retail shops. Owing to the laxity of those who administer the Sale of Food and Drugs Act, an enormous quantity of margarine is being sold as butter. Little effort is made to stamp out the trade. We have evidence that some of those whose duty it is to administer the law are corrupt, and are in the pay of the dishonest traders. Not satisfied with selling margarine as butter, many of the retailers in London and other large towns have begun to adulterate butter with margarine themselves. This kind of fraud has been rendered simple, and at the same time profitable, by the introduction of a butter-mixing machine, whereby the manipulation can be carried on with the greatest facility and despatch. We have overwhelming evidence to prove that this systematic fraud is increasing to alarming proportions."

"Is there much benefit from palming off margarine as butter or mixing the two?"

"Considerable; the price of margarine is 60s. per cwt., and the price of butter from 100s. to 120s. per cwt."

"In view of the ineffective administration of the law," continued Mr. Kearley, "several of the leading firms have banded themselves together to run down some of the worst offenders. Some of them have been brought before the magistrates and convicted, but the penalties inflicted are altogether disproportionate to the amount to be gained by continuing the illegal practice. Conviction followed by fine has only been a temporary deterrent. The same men have been fined over and over again, but are still at work. It pays them to pay the trumpery penalties inflicted, and continue their profitable frauds. I should have these men who defraud the community dealt with much more severely; after the first fine they should be imprisoned."

"Are there other causes for the laxity of administration and the prevalence of adulteration beyond those you have mentioned?"

"Yes, a very serious obstacle to effective administration of the law is the conduct of the Somerset House authorities. They have laid down a standard of purity which is so low that it actually permits of adulteration in the case of milk and butter. Analysts hesitate before they grant a certificate condemning an article, as they fear a conflict with Somerset House. The Society of Public Analysts has sent a petition to the Inland Revenue Laboratory Department, Somerset House, pointing out that, while public analysts in the case of milk calculated the amount of adulteration from the normal composition of a genuine article, the Somerset House standard was based only upon an abnormal minimum. It was also pointed out that this minimum was compatible with a considerable amount of adulteration. This letter was signed by nearly all the public analysts in the kingdom, but the Somerset House authorities, who are thoroughly effete, and work on an antiquated system, returned an unsatisfactory answer. As a matter of fact, a large part of the trade in adulterated milk is carried on in defiance of the public analysts. The facilities for the distribution of the adulterated article could not be better if Somerset House were in league with the offenders, which, in a way, it is. Before the magistrate, the testimony of Somerset House is supreme, and public analysts who show any energy in prosecuting offenders feel discouraged by these rebuffs from headquarters."

"What do you suggest in the meantime, Mr. Kearley, pending the production of the little Bill you have in view, to remedy the evils which arise from the apathy and indifference of the Customs authorities, the Board of Trade, and the antiquated methods of Somerset House?"

"First, the present law, as far as it will go, should be firmly administered, and the original offender punished at the port of entry before he disseminates his adulterated articles

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(C. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON, E.

throughout the country. This firm action of the Imperial authorities would terrorise the foreign adulterators, and stop almost all the illicit trade. It would also stimulate the home authorities to more vigilant action. Then the effete analysts of Somerset House—suffering under the enervating influences of a permanent salary and a pension at the end of it—should be replaced by men of the highest analytical talent, men of research anxious to distinguish themselves, who should be attached to a properly organised analytical department, connected, say, with the Ministry of Agriculture. To obviate the repetition of the evils which exist at Somerset House, I should not have these analysts made permanent officials, I should have them paid well, so that they would give their best work to the State. We are absolutely dependent in this country on our importations for food, and I consider, therefore, that the duty of preventing adulteration should become a national work. It is the duty of the State to protect its citizens from the wholesale system of adulteration which is now overlooked or condoned by the indifference of the various authorities among whom the responsibility is divided."

These are only a few of the facts which Mr. Kearley had in his wallet; but as the weary legislator was anxious to get off for a holiday, which was to take the form of visiting his constituents, further conversation on the subject was postponed. Mr. Kearley will introduce a Bill to amend the existing law on the earliest opportunity.

EXTRAORDINARY MILK CASE.

THE COWS SHOULD BE POLE-AXED: NOT MILKED.

AT the West London Police-court on Friday the 18th inst., Richard Poulding, of 4, West-place, High-road, Chiswick, appeared to answer to two adjourned summonses issued at the instance of the Chiswick Local Board, for selling a quantity of milk on April 1st and 8th, from which at least 10 per cent. of fat had been abstracted, and was not of the nature, substance, and quality demanded by the purchaser. Mr. R. F. Finnis, clerk and solicitor to the Chiswick Local Board, appeared to prosecute, Mr. W. T. Recketts defended.—Mr. Finnis in opening the case for the prosecution, stated that the point at issue was a very important one, inasmuch as the summonses had been adjourned in order that the defendant's cows might be milked in the presence of the analyst, to bear out the defendant's statement at the first hearing of the cases, namely, that the milk was sold in the same state as it was taken from the cows. On the 17th of last month, Mr. John H. Clarke, sanitary inspector to the Chiswick Local Board, visited the cowsheds at the defendant's request, and saw five cows milked, after which he took a sample from the churn in which the milk had been placed, and submitted it to the analyst for analysis. He (Mr. Finnis) now produced the analyst's certificate, which stated that the sample referred to was deficient in fat to the extent of 16 per cent. On a subsequent date the cows were again milked in the presence of the analyst's assistant, who expressed his satisfaction of the manner in which the cows were milked. A sample was taken as before, which was also reported to be deficient in fat to the extent of 10 per cent. In view of these facts, he (Mr. Finnis) was quite prepared to withdraw the summonses if the magistrate thought fit, but before doing so he wished to call scientific evidence on the subject, having regard to the importance of the case. He should, however, first call the inspector, and in doing so proved that the samples had been taken as stated. In reply to Mr. Finnis, the inspector stated that he saw five cows milked in the defendant's shed, all of which appeared to be in good condition. He was informed that they were fed upon hay, mangel-wurzel, and brewers' grains. The defendant had told him that he knew his milk was very poor and deficient in fat. (The question of adding colouring matter to the milk was objected to.) He (the inspector) believed the cows to be shorthorns.—Mr. Edward Bevan, analyst to the Middlesex County Council, Fellow of the Institute of Chemistry, Fellow of the Chemical Society, hon. sec. of the Society of Public Analysts was next called, and stated that he received two samples of milk from Mr. Clarke on April 2nd and 9th respectively. He analysed them, and found them to be deficient in fat to the extent of at least 10 per cent. of fat. In calculating the percentage of deficiency, he took as his basis a milk of low quality. Had he taken milk of average quality, the deficiency would have been more than 30 per cent. These samples being so far deficient in fat or cream, were not in his opinion of the nature, substance, and quality demanded by the purchaser, and the sale of such milk would be decidedly to his prejudice. The record of the analysis of hundreds of thousands of samples of milk shows that the average proportion of fat in milk was nearly 4. The samples in question contained only 2.7 per cent. He had himself analysed many hundreds of samples, and found that the average percentage of all samples, including those which were skimmed and watered, was 3.5 per cent. of fat. The report of Dr. Bell, late head of the Inland Revenue Laboratory, shows that the average percentage of fat in 273 samples of milk from single cows was 3.99, and in 55 samples of dairy milk it was 4.01 per cent. of fat. During the years 1881-91, 120,540 samples of milk supplied to the Aylesbury Dairy Company showed an average fat of 4.1 per cent. During 1893, 11,479 samples of milk supplied to the same company showed 3.91 per cent. of fat, and in only one instance did it fall below 3 per cent., and then it was 2.99.—Cross-examined: Whilst

admitting that the samples which had been taken direct from the cows resulted the same as the others, he still held that the fat had been abstracted as stated in his certificate, if the expression "abstracted" was coupled with the word "deficient." No cows, if properly fed, would produce milk of such poor quality. In this case the cows had been fed to produce quantity not quality. In view of the present proceedings, he should always retain his standard. He felt it his duty to do so. He was not aware that there was any legal standard for milk, but some standard must be taken by analysts, and he always took a much lower standard than the average in order to give the vendor the benefit of the doubt. Separated milk if mixed with new would produce a similar result as the samples in question, and in that case perhaps the word "deficient" in fat would be the proper expression. He remembered a recent case of Mr. Lloyd, in which it had been asserted that a sample of milk taken direct from the cows had shown a percentage of 8 per cent. of added water, but a much higher standard had been taken, and a high basis would produce almost any result. Some dairy companies insisted upon an agreement being signed by farmers and others supplying milk, to the effect that no milk should be delivered to the company from the seller from cows wholly or partly fed on the food which had been admitted by the defendant to be given to his cows. In reply to Mr. Finnis, he was quite aware that the quality of milk varied at different seasons of the year, but he made allowances for that. He handed the magistrate a list published by the Somerset House Authorities showing the average percentage of the milks analysed by that department.—Mr. Otto Hehner, public analyst for Notts, West Sussex, Isle of Wight, the boroughs of Derby and Ryde, past-president of the Society of Public Analysts, vice-president of the Institute of Chemistry, was next called, and in answer to Mr. Finnis said that assuming these samples of milks to have been taken direct from the cows, and further assuming that the cows were in good condition, he certainly did not consider the percentage of fat already referred to in respect to the samples in question a fair sample of milk, it would be an inferior article and not of the nature, substance, and quality demanded by the purchaser.—Cross-examined: Although the cows may have been fed liberally, the kind of food admitted by the defendant to have been given them would certainly produce a substance which could not be called milk in the scientific sense of the word. Another kind of food, such as oil-cake, ought to be given to cause the cows to yield fair quality milk. It was quite possible to feed cows to produce quantity, but if improperly fed they would produce very poor milk. Certain kinds of oil-cake would render the taste of butter unpleasant, but not if the proper kinds were given.—Mr. John Augustus Völcker, analyst to the Royal Agricultural Society, also gave evidence, and stated that in his opinion milk which showed such a low percentage of fat as the samples in question could not be derived from properly fed cows. Dutch cows had been known to give poor quality milk, but not shorthorns. The latter, if properly fed, would produce very rich milk. He was aware of the fact that "shed" cows would produce a large quantity of milk, especially so if fed upon the food which the inspector had described, but it would be of very inferior quality. He was not aware that there was any legal standard for milk, but his society would certainly not accept cows which gave such inferior milk as that in question. He had recently received a letter from a farmer asking his opinion with regard to the feeding of his cows, which he stated had been fed precisely the same as the cows in question. His reply was to the effect that if he did not feed his cows on more substantial food he would run the risk of a prosecution. He analysed a sample of milk received from the farmer referred to, but found it much richer in fat than the defendant's.—Mr. Charles Edward Cassal, Fellow of the Institute of Chemistry, vice-president of the Society of Public Analysts, public analyst for Kensington, St. George's, Hanover-square, Battersea, High Wycombe, and the Western Division of the County of Lincoln, was the next witness, and said, had such samples of milk as the defendant's come before him he should certainly report it as milk which was deficient in cream or fat. Although taken direct from the cows, as these samples were admitted to be, he certainly did not call it milk in the ordinary sense of the word, he should call it a pathological mixture. From what he had heard that day he was of opinion that the cows were improperly fed to produce a large quantity of milk, and that it had consequently deteriorated in quality. Although no legal standard was given, he should consider that any substance containing so little fat was not of the nature, substance, and quality demanded by the purchaser.—In closing the case for the prosecution Mr. Finnis said that at least one observation he wished to make to the magistrate, and that was that the Chiswick Local Board were bound on receipt of the analyst's certificate, to institute these proceedings in the interest of the public. Although the cream may not have been actually abstracted in the strict sense of the word, yet it had been admitted and proved beyond doubt that it was seriously deficient in fat or cream, and that the analyst had taken a low standard in order to give the defendant the benefit of the doubt. It was for the magistrate to decide whether the milk was or was not of the nature, substance, and quality of the article demanded. That being so, the summons should have been issued under section 6, instead of, or in conjunction with, section 9 of the Act, as these were. It was also a question for his Worship to decide as to whether a dairyman, having regard to the fact that he knew, as the defendant did in this case, that the milk was deficient in cream, should be allowed to continue the practice of feeding his cows so as to produce such poor milk, in order to obtain

a large quantity.—Mr. Recketts, for the defence, said that in view of this case he hoped the magistrate would never convict again on a summons for 10 per cent. deficiency in fat. It appeared to him that all this evidence had been brought forward to whitewash the analyst's certificate, and he hoped that he would not only dismiss the summons, but grant costs.—Mr. Curtis Bennett, in summing up, informed Mr. Recketts that with regard to his remark that he should not convict on summonses when 10 per cent. of fat had been abstracted was a matter which might be introduced in favour of his case, but which ought not to be pressed too far. As to this case he certainly should have convicted had the summonses and analyst's certificate been drawn up in a different form. He was satisfied that there had been no "abstraction." He considered that any article of food, including milk, should at least contain the amount of ingredients which may be reasonably expected by a purchaser. It had been proved beyond doubt by the expert evidence before him, that it was quite possible that a dairyman, in order to produce a large quantity of milk for his own benefit, to diet his cows in such a manner as to bring about the above result, and yet at the same time the milk would not be of the nature, substance, and quality demanded by the purchaser. Here it had been proved that the average percentage of fat in milk was 4 per cent., and further that the analyst in this case had taken a much lower standard, and still it was deficient in cream, and the kind of cows from which the milk was obtained are naturally expected to produce good quality milk, and although admitted to be in good condition they were yielding a large quantity of milk in consequence of their diet, which had been given to produce *quantity* and not *quality*. He did not consider that the analysts had whitewashed their theory, but on the contrary they had supported their certificate. He was afraid that if Mr. Recketts was asking for costs, he would ask in vain.—The summonses, however, would be dismissed, but without costs.

THE FOLLOWING IS A COPY OF THE SUMMONS.

Sale of Food and Drugs, 38 and 39 Vict., c. 63.

West London Police-court. Adjourned to May 18th. Also 2nd summons to Richard Poulding, of 4, West Place, High-road, in the parish of Chiswick.

Metropolitan Police District, to wit.

Whereas Information hath this day been laid before me, the undersigned, one of the Magistrates of the Police-courts of the Metropolis (having jurisdiction in the place where the article of Food hereinafter mentioned was actually delivered to the purchaser), by JOHN HENRY CLARKE, of the Vestry Hall, in the Parish of Chiswick, the Inspector of Nuisances for the District of Chiswick, acting under the direction of the Chiswick Local Board, the Local Authority appointing the said Officer, and charged with the execution of "The Sale of Food and Drugs Act, 1875": *For that you*, within six calendar months last past to wit, on the 1st day of April, in the year of our Lord One Thousand Eight Hundred and Ninety-four, in Bolton Gardens, in the Parish of Chiswick, in the County of Middlesex, unlawfully did sell, in its altered state without notice, to the prejudice of him, the said JOHN HENRY CLARKE, the purchaser, an article of food, to wit, one pint of milk from which ten per cent. of fat had been abstracted, and was not of the nature, substance, and quality of the article, namely, new milk, then demanded by such purchaser, contrary to Section Nine of "The Sale of Food and Drugs Act, 1875":

These are therefore to command you in Her Majesty's name to be and appear on Friday, the 20th day of April, in the year of our Lord One Thousand Eight Hundred and Ninety-four, at Two o'clock in the Afternoon, at the West London Police-court, in the County of London, before such Magistrate as may then be there, having jurisdiction in the place where the said article sold was actually delivered to the purchaser, to answer to the said Information, and to be further dealt with according to law.

Given under my hand and seal this 6th day of April, in the year of our Lord One Thousand Eight Hundred and Ninety-four, at the Police-court aforesaid."

If Mr. Bevan's certificate had been worded differently, and the word "deficient" had been substituted for "abstraction," a conviction would have been obtained.

BIRMINGHAM AND ADULTERATION.

AT Birmingham on May 18th, William Henry Greening, of Manor Farm, Ashchurch, Gloucestershire, farmer, was summoned by Mr. T. Davis, foods and drugs inspector to the Health Department, for selling milk 18 per cent. deficient in fat. Defendant, who pleaded guilty, was fined £3 and costs.—Allen Gibbs, of Stratford-road, provision dealer, was fined 60s. and costs for selling butter adulterated to the extent of 80 per cent. of foreign fat, and not labelled as margarine.—Charles Marlow, manager of a shop for Mr. Gibbs at 60, Longmore-street, was mulcted in a similar penalty for a like offence. In the first case the manager had left, and Mr. Gibbs had accepted the responsibility, but he had written to the inspector stating that he had instructed all his managers that they would be responsible for any breach of the Act.—Messrs. Holloway Brothers, of Ludgate Hill, Birmingham, chemists and drysalters, were summoned for selling syrup of rhubarb with 20 per cent. of added water, and nitrous ether 46 per cent. below the standard strength. Dr Showell Rogers, who appeared for the defendants, said that in the case of the nitrous ether it was absolutely impossible to comply with the law, as the spirit was so volatile. In the first case defendants were fined £3 and costs, and in the second £1 and costs.

KENT AND ADULTERATION.

DURING the past quarter 228 samples have been analysed by the public analyst of the Kent County Council; of these nineteen were adulterated. The percentage of adulteration is in excess of the previous quarter, and the worst cases were coffee adulterated with 53 per cent. of chicory, and butter containing 75 per cent. of foreign fat.

COFFEE AND 72 PER CENT. CHICORY.

JAMES R. EVANS, of 46, Cornwall-road, Saltmead, was charged before the stipendiary magistrate, at the Cardiff Police-court, on May 18th, with selling adulterated coffee on April 18th. A sanitary inspector bought of the defendant a quarter of a pound of coffee, which, on being submitted to the borough analyst, was found to contain 72 per cent of chicory.—Defendant was fined 40s. and costs.

THE "STUFF" SOLD AT COFFEE SHOPS.

MR. VICTOR ROGER inquired whether the General Purposes Committee of the Lambeth Vestry had taken into consideration the expediency of analysing samples of the stuff sold at coffee-houses and stalls. Mr. Wightman replied that the matter had been considered, but the difficulty was in arriving at a standard of value. Mr. Roger: What I want to get at is the nature of the ingredients used. I have heard it said that old hats are stewed down to make coffee. Dr. Verdon (medical officer of health) said he had consulted with the analyst, and they had come to the conclusion that it was quite impossible to do anything under the Adulteration Act. Mr. Roger: I am sorry to hear that.

THE MARGARINE ACT IN IRELAND.

AT Tuam Petty Sessions, Con. Kirby, R.I.C., Tuam, summoned Mr. Thomas Munroe, Tuam, for not having a label on the margarine exposed for sale in his shop. Mr. Quinn, solicitor, appeared for the defence. Constable Kirby deposed that on the 25th of April he observed some stuff like margarine in Mr. Munroe's shop. There was no label on it. Cross-examined by Mr. Quinn: Mr. Munroe said that he had told the boy to put on the label that morning but he did not do so. He then found the label two shelves off, "Mr" was printed, and "gerine" written. (Mr. Lewin: That was Mr. Gerine). Constable Kirby said this was the second offence, and the Court inflicted a fine of £2, Mr. Lewin remarking that defendant was getting off easily.

FOULING ITS OWN NEST.

THERE is a proverb that states "It is a dirty bird that fouls its own nest," and we would recommend a consideration of that proverb to the general press of the United Kingdom. By the exercise of persistent cheek the Danish Government has contrived to firmly establish a belief in the minds of those responsible for educating the public in the daily press that there is no butter so good as Danish. The result is that every ignoramus who has to do with the ordering of butter for public institutions echoes the parrot cry that there is nothing like Danish. This is arrant nonsense. There are Irish butters such as Dowdall's creamery, Cleeve Bros., and English creameries that are far superior to any Denmark is ever likely to produce, inasmuch as they are from better pastures and cattle, and quite as skilfully made. We should like to see less laudation of the products of foreigners and a little more common-sense and disposition to aid our own industries on the part of the press, and we might then be spared folly such as the following:—

At the meeting of the Chesterfield Board of Guardians on May 19th, Mr. J. S. Sampson in the chair, the clerk (Mr. Geo. Shaw) said a sample of the butter supplied to the workhouse had been sent for analysis to Mr. A. H. Allen, who had reported that the specimen contained little or no butter, but consisted of margarine. The clerk said the contractor had written him to the effect that he had bought the butter at Liverpool, and understood it to be genuine Irish butter. If it was not so he was prepared to forego his charge for the cask examined, and would be very careful in future to get a warrant for the butter purchased, and not buy from a stranger again.—Mr. Harrison, Stonebroom, speaking as a judge of butter, declared the supply to be margarine, and recommended the Guardians to have Danish butter next time, as it carried a guarantee with it, which they did not get for Irish and other butters. He was sorry to complain under the circumstances, but did so in the interest of the inmates.—Mr. Glossop said his agricultural friends had considered the butter a fair thing.—Mr. W. Spooner proposed that the contractor be prosecuted.—The Clerk said the whole of the butter had been consumed.—Mr. Glossop thought the contractor's forfeit should be accepted, and did not think the Board had a case.—The Chairman was in favour of prosecuting if possible, and said they should risk it. Finally the clerk was instructed to make inquiries, and if desirable take proceedings against the contractor. Afterwards it was decided to invite tenders for English as well as other butters.

AT Bristol Police-court on May 18th, Henry Maggs, 114, Hotwell-road, Clifton, was summoned for selling a pint and a half of milk on April 24th, the same being adulterated to the extent that it was deficient in butter fat to the amount of one-fifth. Inspector Johnson and P.-c. Pollard gave evidence, and accused was fined 40s. and costs.

FOOD ADULTERATION IN LEICESTER.

AT the Leicester Borough Police-court on May 18th, before Messrs. J. Stafford and A. Baines, there were a number of prosecutions by the Leicester Corporation, represented by Mr. Storey, town clerk, under the Food and Drugs Adulteration Act.

There were three summonses against John Wilson, grocer, 1, St. Leonard-street, namely, for selling butter adulterated with 65 per cent. of foreign fat; selling one pound of margarine not indicated in the required manner as such; and exposing for sale a quantity of margarine without properly indicating its nature.—Defendant, who was represented by Mr. Simpson, pleaded guilty to the first charge, but denied the other two.—Inspector Bent purchased a pound for 1s. 2d. of what purported to be butter, and was represented to him as Kiel, but which turned out to be margarine.—Mr. Simpson contended that defendant was victimised, having bought the article as butter for 1s. a pound., which was borne out by defendant.—Fined £3 and costs for the first offence, and ordered to pay the costs in the other two cases.

Thomas Hubbard, milk dealer, York-street, for selling milk diluted with 4 per cent. of water on April 29th.—Mr. Fowler defended.—Inspector Catlow supported the charge, he having purchased a pint of milk from defendant's wife for 1½d., for the purpose of analysis.—At the request of Mr. Fowler, Dr. Priestly, the public analyst, was called as a witness for the prosecution.—In the course of cross-examination by Mr. Fowler, Dr. Priestly said the total amount of milk solid in the sample analysed was 11·5 per cent., the solids not fat being 8·14, and fat, 3·36, but he could not give the exact quantity of water without a calculation.—This calculation Mr. Fowler insisted upon, and the result arrived at by Dr. Priestly was 88. Mr. Fowler then quoted from authorities to show that the water in milk seldom varied from 87 to 88 per cent., and the solid constituents from 13 to 12 per cent. It was not necessary, Dr. Priestly said, to take the ash into account. Dr. Priestly then quoted from another authority to show that 8·5 per cent. was quite low enough for total solids not fat. Mr. Fowler submitted that his client was perfectly innocent of the charge made against him, and he should call a thoroughly competent witness who had made an analysis of the sample, who would show that it was of the normal quality, and that there was no added water.—Mr. Lewis Ough, analytical chemist for Messrs. Richardson and Co., a Fellow of the Chemical and Pharmaceutical Societies, found the sample of milk he analysed on the 11th May well within the mark.—By the Town Clerk. He said the quantity of water would not vary to any appreciable extent on account of the elapse of eleven days, and he was prepared to swear that there was no added water. The standard he took, on the authority of Professor Hatfield, was 2·5 per cent. fat and 9 per cent. non-fat, and 87·3 per cent. water. The time that elapsed before his making the analysis would rather tend to the reduction of the fat constituents than of the water.—Defendant was then called, and denied positively that any water was added to the milk, either by himself or anyone else. The young man who milked the cows, the servant girl who received the milk at his hands, and the wife of defendant also gave similar evidence. After a brief consultation by the Bench, the Chairman said they felt bound to support the public analyst, although it was not a serious case, and defendant would be fined £1, including costs.—Mr. Fowler gave notice of appeal.—Mr. Fowler applied to the magistrates that the sample of milk might be sent to Somerset House for analysis for the purposes of the appeal.—The magistrates, however, were unable to make such an order, and suggested that Mr. Fowler should endeavour to arrange it with Mr. Storey.—Mr. Storey considered it too late to send it.

Avery Grimes, grocer, 59, Oxford-street, was summoned for selling margarine without having it marked as such, in accordance with the requirements of the Act, and further with exposing margarine for sale without notifying properly what it was, on the 1st inst.—Inspector Hassell deposed to visiting the shop of the defendant, and finding there a quantity of margarine exposed for sale. Witness asked for a pound of butter, and defendant brought forward some of the margarine, which, however, witness refused to accept. Afterwards, another article was brought, for which he paid 10d., and he told defendant why he purchased it. Defendant said the margarine was not on sale. The magistrate considered it was a clear case of fraud upon the public, and a very bad case, and defendant was fined £5 and costs in each case, or one month's imprisonment.

THE remains of the late Mr. Edward Davey, who for about twenty years discharged the duties of inspector of foods to the Corporation of Belfast, were interred on Saturday in the cemetery. In the cortege were Alderman Corbett, J.P., chairman of the Market Committee, and several members of the City Council.

APPOINTMENT OF DISTRICT ANALYST FOR ARGYLLSHIRE.—The Argyllshire County Council at their last meeting appointed Mr. J. W. Biggart, of Messrs. McCowan and Biggart, public analysts, Greenock, to be district analyst for Argyll, under the Fertilisers and Feeding Stuffs Act.

EXPERIMENTS made by Dr. J. Forster at Amsterdam to determine the temperature necessary to kill the tuberculosis bacillus when it is present in milk, show that it is not necessary to boil milk to kill this germ. It can be destroyed by heating milk at any one of the following temperatures for the time given: 131 deg. Fahr. for four hours, 140 for one hour, 149 for fifteen minutes, 150 for ten minutes, 176 for five minutes, 194 for two minutes, 203 for one minute. The objection to the taste of boiled milk is thus got rid of.

WOLVERHAMPTON AND THE ADULTERATION ACTS.

WE are pleased to see by the report of Mr. G. F. Allwood that since the working of the Acts came under his supervision Wolverhampton need no longer fear censure from the Local Government Board. Mr. Allwood's report states:—

"It will be observed that altogether 145 articles of different kinds were purchased, showing on analysis a percentage of adulteration approximating to 14·5 and, estimating the present population of the Borough at 84,000, an average of one sample per 579 persons per annum.

"According to the last Local Government Board Report, the amount of adulteration throughout England and Wales is returned as 12·4 per cent. of samples analysed, so that Wolverhampton with 14·5 shows a higher return than the general average.

"This percentage, however, is a considerable increase upon that of the past 4 years (when fewer samples were taken), the Town Council's annual returns for 1889, '90, '91, and '92 giving respectively 7·5, 6·6, 4·1, and 9·6 of adulteration.

"The greater portions of the purchases are now made by deputy, and as far as possible under the conditions of trade that obtain in the district.

"No sample was submitted by private purchasers, and for obvious reasons it is feared the powers given by the Legislature in this respect will not at present be taken advantage of to such an extent as could be desired.

"It is an undoubted fact that, owing to the colour and general appearance of margarine being made to so closely resemble those of butter this factitious substance is frequently palmed off upon unsuspecting buyers in place of the genuine article. The special efforts which have been made to stamp out this class of fraud will be more noticeable from a reference to the prosecutions of margarine vendors set forth in the table. A deterrent effect will no doubt be exercised on would-be fraudulent traders by this action."

CORRESPONDENCE.

STARCH IN YEAST.

To the Editor of FOOD AND SANITATION.

May 21st, 1894.

SIR,—May I be permitted to add a few words on this subject to Mr. W. S. Squire's valuable communication? I believe the first successful prosecution for the adulteration of yeast with starch in this country was instituted on one of my own certificates. In 1887, the Authorities of the County of Durham took this matter vigorously in hand, and in that year I devised and published in *The Analyst* the only method then known for the direct determination of starch in yeast. Many prosecutions arose out of the Authority's determination to put down this form of fraud. As a result it is very seldom now that a sample of starched yeast comes into my hands. If it is sold in the county at all, it is labelled "Mixed Yeast." There cannot be the slightest question that the addition of starch to sound and healthy yeast is absolutely unnecessary. That it imparts a certain appearance of quality to yeast which has been damaged by defective manipulation I am quite prepared to admit, but it seems to me that this is one of the best reasons for putting a stop to the practice.

The question whether yeast is a food may, I think, be decided by reference to the definition of the word food given in section 2 of the Food and Drugs Act, 1875, which says, "any article used for food by man." It does not say used *as* food. There is a wide difference between *for* and *as* in this application. A man may, and does use that *for*, that is, *conducive to*, his food which he could not use *as* or *in place of*, his food. In this sense, which I submit is the true sense of the letter and spirit of the Act, yeast is as much a food as the articles enumerated by Mr. Squire, or indeed as any article which has been held to be subject to the provisions of the Act.—I am, Sir, your obedient servant,

W. T. KEATING STOCK, F.I.C.

County Analysts' Office, Darlington.

"THE KEELEY GOLD CURE."

To the Editor of FOOD AND SANITATION.

SIR,—I have read with extreme interest the reports by Dr. James Edmunds and Mr. A. H. Allen in your issue of the 19th on "Keeley's Gold Cure."

According to Mr. Allen's report, the quantity of gold he found was in "medicinal doses," therefore the amount of gold contained in one bottle must be very small indeed. The medicinal doses of salts of gold range from $\frac{1}{10}$ to $\frac{1}{2}$ of a grain, so taking the maximum dose there is not quite $5\frac{1}{2}$ grains in the whole bottle, costing about sixpence; but the most serious part of the question is the exceedingly poisonous nature of the salts of gold; they require to be administered with very great caution. Their poisonous properties somewhat resemble those of corrosive sublimate, but if anything rather more severe. This nostrum is therefore one which ought not to be taken except under strict medical supervision; it is another example of the necessity of extending the poisons schedule.

Yours etc., WILLIAM JOHNSTONE.

1, Arundel Street, Strand, W. C.

COLEMAN'S "WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

Sole Manufacturers:

COLEMAN & CO., Limited, NORWICH and LONDON.

A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps

Food and Sanitation.

SATURDAY, JUNE 2ND, 1894.

THE BOARD OF TRADE.

Mr. JAMES BRYCE succeeds the company-mongering Mr. Mundella as President of the Board of Trade, thus affording us another example of "how not to do it." Mr. Bryce knows nothing whatever practically about trade, his sole qualifications for this important post being that he is Regius professor of Civil Law at Oxford, an ex-under secretary for foreign affairs, and a straight voter for his party. The Merchandise Marks Act was "burked" by his predecessor from motives of self-interest, and the department run to make things as easy as possible for a number of University-trained gentlemen who only hear of trade to despise it. We expect no better under Mr. Bryce's presidency, for just as it would be vain to seek to gather figs from thistles, so it is vain to expect enlightened or beneficial work for English traders from this kind of scandalous political jerry-mandering. Every day in every part of the kingdom the Merchandise Marks Act is being violated with impunity to the direct injury of English industries and the throwing out of employment of English workmen. We will not do Mr. Mundella the injustice of saying he was not well aware of this, because just as it suited his business purposes to allege that "Balbriggan hose" might be so called even if made in France, Germany or Nottingham, so it paid him to take £2,000 per year from his adopted country's pocket for deliberately encouraging the sale of Danish, American, and other foreign produce as English or Irish. It is but a few months since, swollen with insolence, the Italian-English political hack point blank refused to enforce the Merchandise Marks Act against a host of offenders, which the Provision Curers' Association brought before the notice of the Board of Trade. We are not, therefore, amongst those who can utter one regret at his tardy fall, inasmuch as we believe it would have been well for English trade and for the investing public, had his exposure come years ago. The question for English merchants, manufacturers, and agriculturists, is—will his successor do any better? We do not think he will. It is true that he has not the same sordid inducements to "burke" the Acts, but the same gang of permanent officials remain, and if Mr. Bryce knew anything about trade questions, and wished to make the department do any useful work, the "Tite Barnacles" would have a hard fight to preserve their circumlocution methods. This unsatisfactory state of things is bound to continue so long as our public departments are filled with University men, able perhaps to read a little Latin, and less Greek, but utterly ignorant of the conditions under which the trade of the kingdom is carried on. When England made machinery, and spun stuffs and woollens for the world, when there was competition nowhere, these University ignoramus were comparatively harmless. To-day, when every country is fostering its own manufactures, when Denmark, America, Germany, France, Australia, are filling our markets with goods that in a great part ought to be produced within our own shores, these university nincompoops are more than a nuisance—they are a national curse. Against their hide-bound conceit and stupidity common-sense knocks in vain, and merchants and manufacturers

TRUE RECIPROCITY!

OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

"SILVER VEIL,"

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

Why support the product of a country which brags of the McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDEN'S FACTORIES, LIVERPOOL.

find themselves exasperated and powerless. £179,000 per year is swallowed by a department that cannot enforce the Merchandise Marks Act, give traders protection from railway companies' rapacity, or furnish a consular report worth the paper it is printed on. American, Dutch, and German consuls are on the alert to communicate to their departments information as to new channels for trade, because their departments are governed by practical business men. Ours is governed by University men and our consuls despise trade because they know nothing about it. What wonder, therefore, that workmen in Sheffield, Bradford, Leeds, Manchester, and our great industrial towns are starving, and that every day sees more and more trade leave England! So will it be until we have a traders' party and business men in our public departments.

COFFEE WITH 80 PER CENT. OF CHICORY.

At the Rotherham West Riding Police-court on May 28th, before [Messrs. G. W. Chambers, E. W. Hodgkinson, and B. J. Young, a shopkeeper, Henry Snowden, of Kiveton Park, was fined 20s. and costs for selling coffee adulterated with 80 per cent. of chicory to Police-sergeant Barclay on April 17th. The officer visited the shop and paid 5d. for a quarter of a pound of "coffee," which was served to him by a boy.—The defendant's wife pleaded that she and her husband were away from home, and the boy made a mistake by not stating that it was chicory and coffee.

MARGARINE v. BUTTER FOR HOSPITALS.

At the meeting of the Sheffield Board of Guardians on Wednesday next the minutes of the committees which have met during the past fortnight will be brought up for discussion. Amongst the matters and recommendations will be the following:—

The minutes of the Hospital Committee say that "It was reported to the committee that complaints had been made some weeks ago that the margarine supplied to the hospitals was not good, and the medical officer had drawn the attention of the chairman of this committee to the fact that many of the patients were not eating the margarine. Some conversation took place as to the desirability of providing butter for the hospital patients, and it was recommended:—'That the medical officer be authorised to order butter in place of margarine for such patients as he thinks it is desirable from a medical point of view.'"

THE FARMERS' DIRECT SUPPLY CO. AGAIN!

At Kensington Petty Sessions Henry Boswell, of Putney, was summoned for selling milk adulterated to the extent of 30 per cent. A lad named Graham proved having purchased the milk at the instance of Inspector Hawkins. Witness asked for twopenny-worth of new milk, and received a pint and a half.—The Inspector said the real name of the firm was the Direct Farmers' Supply Association. The purchase was made from a barrow driven by a man named Jenkins; there was no name on the barrow, but the words, "Burleigh Farm Dairy."—Mr. Stephens, a clerk in the service of the vestry, said it was the practice with the firm to take branch establishments under different managers.—Mr. Leete said the career of this firm was well-known. Summonses had been issued all over London, and fines amounting in all to between £250 and £300 had been inflicted. He should have summoned the association, but it was not a company.—P.-c. Dawe having proved the service of the summons on a young woman who admitted that she was Boswell's daughter, the bench inflicted a fine of £5, and costs.

SOMERSET HOUSE PRECISELY THE SAME.

A. PAYNE, a dairyman, of 228, Carlton-vale, Kilburn, was summoned before Mr. Plowden by Thos. Parker, on behalf of the Paddington Vestry, for selling milk from which 30 per cent. of the butter fat or cream had been abstracted.—When evidence had been called in support of the case the defendant disputed the analysis, and at his request the case was adjourned in order that one of the samples might be analysed by the Somerset House authorities. It was now reported that the certificate of the Somerset House analyst was precisely the same as that given by Professor Stokes, the analyst for Paddington.—Mr. Plowden fined the defendant £3 with 23s. costs, in addition to the half-guinea paid for the special analysis.

DISEASED MEAT.

At the Ilkeston Petty Sessions, on May 24th, Thomas Hallam, butcher, Rutland-street, Ilkeston, was charged at the instance of the Ilkeston Corporation, with having, on the 12th May, unlawfully exposed for sale a piece of beef unfit for the food of man.—Mr. Wright Lissett, town clerk, prosecuted, and Mr. Crouch defended.—Mr. Thomas Evans, sanitary inspector, said on Saturday night the 12th ult. he visited the shop of defendant, but saw nothing to complain of. He went again, in company with Dr. Carroll, the medical officer. Defendant had then returned in a trap from Heanor market, and in a basket he took out of the trap, witness found one piece of meat, amongst seven or eight other pieces, which was bad. He gave it to the medical officer, and in the judgment of both it was unfit for food. Witness took it to a magistrate, Alderman Tatham, at midnight the same night, and he condemned the meat, and it was destroyed the following morning.—Dr. Carroll gave similar evidence, and unhesitatingly said the meat was unfit for the food of man. For the defence, it was urged by Mr. Crouch that the meat was all off one quarter; but a witness for defendant said there were parts of two beasts. They sold the meat in Heanor Market, at 6d. and 7d. per pound; some at 5d.—The Bench inflicted a fine of £10 and £1 2s. costs.

BABY'S EXHIBITION.

At Humphreys Hall, Knightsbridge, S.W., June 2nd to 29th, 1894, Mrs. Ada S. Ballin, the popular authoress and lecturer, and editor of *Baby: the Mother's Magazine*, will deliver the following course of lectures during each week this exhibition is open, at 3 o'clock p.m.:—1.—On "The Clothing of Infants and Children"—Mondays the 4th, 11th, 18th, and 25th of June. 2.—On "The Feeding of Infants and Children"—Tuesdays the 5th, 12th, 19th, and 26th of June. 3.—On "Exercise and Rest"—Wednesdays the 6th, 13th, 20th, and 27th. 4.—"On Education"—Thursdays the 7th, 14th, 21st, and 28th. 5.—"On Children's Complaints: their Prevention and Cure"—Fridays the 8th, 15th, 22nd, and 29th.

This arrangement of dates will enable ladies who miss one lecture to hear it the next week. There will be a written examination held on the 29th of June, after the lecture, at which a prize—value three guineas—will be awarded, and certificates given to successful competitors. Season tickets, admitting to the opening ceremony, and at all times during the exhibition, and entitling the holder to a reserved seat at the lectures, may be had, price ten shillings, at the city office, Basing House, 17, Basinghall-street (ground floor); Humphreys Hall, Knightsbridge, S. W.; or the office of *Baby*, 183, Strand, W.C.

MILK ADULTERATION IN CARDIFF.

At the Cardiff Police-court on May 25th—before Mr. Stipendiary Lewis and Mr. Spencer—a case of milk adulteration was heard. The deputy town clerk, Mr. F. C. Lloyd, conducted the prosecution on behalf of the Cardiff Corporation. An officer purchased milk from a shop at 36, Wells-street, Canton, occupied by John Williams. Williams was summoned, and his wife was also included in the charge for selling.—Mr. Lloyd called the usual evidence, putting in the analyst's certificate showing that the milk was minus 25 per cent. of its natural fatty solids, and on Mrs. Williams being fined £5 and costs, the case against the husband was withdrawn.

ARE MILK-CHURNS MEASURES?

A TEST CASE FROM STOKE-ON-TRENT.

JOHN HARRIS, of Dairy House, Leigh, Stoke-on-Trent, was summoned on May 22nd.—before Mr. Bros.—at the Clerkenwell Police-court, for having in his possession, on April 27th, for the use of the trade, two milk-churns (Nos. 1,014 and 252), which were false and unjust. The defendant was further summoned for having in use on April 28th a third churn (No. 1,015), which was false; for using on the same day a churn which was not stamped; and for wilfully committing fraud on May 29th in using such churns. The summonses were taken out under sections 25 and 29 of the Weights and Measures Act, 1878. Mr. T. Seager Berry, solicitor, prosecuted on behalf of the London County Council, and Mr. Horace Avory, barrister, appeared for the defendant. Mr. Berry asked leave to amend the fourth summons. Mr. Harris was alleged to have committed an offence on May 29th, it should have been April 29th.—Mr. Avory consented to the first three summonses being taken together.—Mr. Berry said it was the practice for the defendant to send milk on the North Staffordshire and London and North-Western Railway to Euston under an

agreement with Mr. Handsley. The churns contained gauges denoting up to 17 gallons, which amount the vessel contained, and the quantity of milk in the churns was compared at the railway station with the bills which accompanied the consignment. The case before the magistrate was a test one, and the point was, whether milk churns were regarded as measures or not. The churns were regarded in the trade as holding a certain number of gallons. Mr. Handsley wrote to the defendant complaining that the gauges were incorrect, and later called the attention of the London County Council inspector to the churns, which led to the summonses being taken out.—Mr. Handsley, milk-dealer, 1 and 2, Caledonian-road, said that in April he wrote to the defendant complaining of receiving short measure, and Mr. Harris replied asserting that his milk was of the finest quality, and that rather than receiving less milk than he paid for Mr. Handsley had often been sent several pints over.—Mr. H. Avory: Is it not a fact that this dispute arose in consequence of Mr. Harris pressing you for money? Witness: I had a dispute as to the payment of some small amount, but that was settled. John Stubbs, an inspector of weights and measures in the employment of the London County Council, said he tested the defendant's churns at Mr. Handsley's premises. He found the churn No. 1,015 two pints short according to the gauges, No. 1,014 rather more than two pints short, and No. 252 one pint short. Cross-examined: He examined altogether 13 churns, all of which except one were deficient.—Witnesses were called who stated that the churns were usually regarded as measures.—Mr. Avory said, as far as he knew, there was nothing which made the evidence of the County Council's officer conclusive. He called Charles Griffiths Wallace, of Uttoxeter, an ironmonger, who said that in December last he made and supplied the defendant with four churns, three of which he recognised in court. He gauged the churns with imperial measures stamped by the inspector of his district.—Mr. Berry: Why don't you have the churns stamped? Witness: Because many inspectors of weights and measures refuse to stamp churns because they do not regard them as measures.—The fourth summons—that relating to fraud—was withdrawn at the suggestion of the magistrate, and the other summonses were adjourned for fourteen days, when the points raised will be discussed by counsel.

COMPOUND LIQUORICE POWDER.

At Saddleworth Police-court, on May 23rd, before Messrs. G. F. Buckley (in the chair), W. Buckley, J. F. Buckley, H. Mallalieu, G. H. Schofield, and J. F. Booth, Sarah Pickup, general dealer, Greenfield, was summoned for a breach of the Food and Drugs Act. Mr. Joseph Bradbury, who represented the defendant, pleaded not guilty.—Mr. A. L. Bridge, the County Council inspector, stated that, on March 29th, he went to the defendant's shop and purchased several articles, including some compound liquorice powder. He told defendant's agent that the articles were for analysis. The liquorice powder was analysed by Mr. Allen, the County Council analyst, and that gentleman's certificate stated that the sample was destitute of sulphur, which was required to be used in the preparation of the powder in the proportion of 1 oz. to 12oz., or 8'33 per cent. The analyst was of opinion that the omission of the sulphur would naturally affect the medicinal value of the preparation.—By Mr. Bradbury: The other samples taken were found to be pure. He did not know that there were two kinds of liquorice powder. He did not know that one kind contained sulphur and that the other kind did not contain sulphur. This was the only time he had found the sulphur to be omitted in the preparation of the compound. Mrs. Pickup's agent did not tell him that she kept two kinds of powder. Sulphur was one of the cheapest ingredients in the compound.—Mr. Bradbury contended that no offence had been committed. Defendant had sold the powder as it had been purchased from the wholesale dealer, and there could have been no fraud, because the sulphur was the cheapest ingredient in the compound. Then, again, defendant was obliged to sell liquorice powder without sulphur, because that containing sulphur was unsaleable, as people did not like it.—Frederick Blackburn, Mrs. Pickup's agent, stated that the powder sold to the inspector cost more than the powder containing sulphur. People would not buy the powder containing sulphur. During the last twelve months he had only sold three or four ounces of the powder. He usually kept two kinds of the powder. That without the sulphur was the dearer by 50 per cent. Mr. Bridge: Do you mean to say they increase the price 50 per cent. for 8'33 per cent. of sulphur?—Witness: Yes, I pay 1s. a lb. for the powder containing sulphur and 1s. 6d. a lb. for that without sulphur.—Mr. Bridge: I cannot see that.—Witness: I am giving you the prices.—The magistrates imposed a fine of 5s. including costs.

CATCHING THE FARMER.

At Lambeth Police-court James Lickfold, a farmer, of Reigate, Surrey, was summoned by Mr. H. Treherne Wiggs, on behalf of the Lambeth Vestry, for selling milk containing seven per cent. of added water.—Mr. W. H. Armstrong, solicitor, defended.—Mr. Wiggs stated that he attended at the Vauxhall Railway Station on May 7th, and took a sample of milk from a churn consigned by the defendant to a Brixton dairyman. The sample was submitted to the public analyst, who certified that it contained seven per cent. of added water.—The defence was that there was a small hole in the refrigerator used for cooling the milk, and that some of the water most have escaped into the milk.—Mr. Brown ordered the defendant to pay a fine of £3, and 38s. costs.

THE MARGARINE ACT.

AT Manchester City Police-court, on May 23rd, before Mr. Headlam, stipendiary magistrate, two cases under the Sale of Food and Drugs Act were heard. In the first case the defendant was Emma Weatherlake, provision dealer, Ashton Old-road, Openshaw, and she was summoned at the instance of the Health Committee of the Manchester Corporation for selling margarine as butter.—Inspector Wheeldon deposed to visiting the defendant's shop on April 5th, and saw on the counter three parcels, one labelled with the word "Margarine," and the other two unlabelled. These he took to be butter, as they were marked 1s. per lb., and he asked for "a pound of the shilling butter." He was served, and divided the sample in the usual way.—Mr. Estcourt, the city analyst, said he had analysed the sample submitted to him, and found that it was margarine pure and simple.—The defendant, who said the margarine labels had been accidentally covered up with a cloth, was fined 40s. and costs.—The defendant in the second case was John Lavey, grocer and provision dealer, carrying on business at 7, Wesley-street.—Inspector Wheeldon said the offence was similar to that in the previous case. He went to the defendant's shop on April 12th, and found two lumps of butter substance on the counter. One was labelled "Margarine," and the other bore no label, except a ticket marked 1s. He asked for a pound of the shilling butter. He was served, and on the sample being analysed, it was found to contain 75 per cent. of foreign fat.—The defendant said he bought the article as pure butter, and only got a profit of 1d. per lb., as he paid 11d. for it. The Stipendiary: Where is your invoice?—Defendant: I did not get an invoice, sir.—Did you get a warranty from the person who sold you the butter?—No, sir.—You are fined 20s. and costs.

UNSTIRRED MILK.

At the Guildford County Bench on May 19th, Walter Lambert, of Cranleigh, was summoned for selling milk not of the substance required.—Mr. J. L. G. Powell, of Richmond, prosecuted on behalf of the Surrey County Council.—Defendant pleaded not guilty.—Counsel stated that a pint of new milk was purchased for 1½d. from the defendant, for the purpose of analysis, and was found to be deficient of butter-fat to the extent of 35 per cent. He understood the defence was that the milk had been standing for several hours, and that it was not stirred when the pint was taken out. In a similar case this had been held to be an offence under the Act.—Frank Badcock, assistant to Mr. Cliffe, county inspector, deposed that he went to the defendant's dairy on April 20th last, acting under his employer's instructions. He was served with a pint of new milk by a servant, and paid 1½d. for it. Nothing was said as to the quality of the milk. Witness then handed it to Mr. Cliffe.—Frederick Cliffe deposed to taking back the milk and showing it to the defendant's wife. He informed her that it had been purchased for public analysis. She said the servant had served witness's assistant with morning's milk. Witness pointed out that nothing was mentioned about this at the time of the purchase.—Replying to defendant, witness admitted that the price of new milk from dealers was generally 2d. a pint, but said it could very often be purchased otherwise at 1½d.—Defendant, addressing the magistrates, said his defence was that no cream had been extracted from the milk, and that the partial absence of butter-fat was owing to the milk having stood several hours and was not stirred when the pint was served.—Annie Garnham said she was in the service of defendant, and served the milk straight from the can. She had never taken any cream from standing milk nor, to her knowledge, had anyone else.—Mr. William Welch, C.C., gave evidence as to the high character borne by defendant.—The Chairman (Lieut.-Colonel Weston) said the Bench were bound to convict, as in the similar case quoted by the prosecution the absence of a percentage of butter-fat under identical circumstances was ruled to be an offence. They exempted defendant from all personal blame, but, owing to the carelessness of others, he would have to pay a fine of £1.

ONE OF THE WORST CASES ONLY FINED 20s.

THOS. WORTHINGTON, proprietor of the Royal Coffee House, High-street, Leyton, Essex, was summoned before Mr. Elliott Howard at the Stratford Police-court on Saturday, May 19th, for selling milk adulterated with 37 per cent. added water.—Mr. N. F. Kittoe, the assistant inspector of weights and measures for the Metropolitan Police district of the county of Essex, prosecuted, and deposed to entering the defendant's shop on April 25th last, and asking for three glasses of milk; defendant's wife served him, and after the purchase was completed, she, having been informed that it had been bought for the purpose of analysis, said "it was not pure milk."—Defendant stated that the milk was sold as he bought it.—The magistrate remarked that this was one of the worst cases of adulterated milk that he had had before him, and fined defendant 20s. and costs 6s. 6d.

Fred. Townsend, junr., provision dealer, Francis-road, Leyton, was summoned for exposing margarine for sale without a label.—The magistrate remarked that generally the new shopkeepers were guilty of this breach of the Act, and that he looked upon it as a serious matter, and fined defendant ten shillings and costs.

DISGRACEFUL "BURKING" OF THE ACTS AT CHESTER.

CHESTER has nearly 40,000 population, and should therefore take at least 40 samples for analyses per year to comply with the Local Government Board's instruction, although this is far too small a number to secure adequate protection for the public. What then can be said of the fact that during the year the following samples of articles of food were taken, and analyses thereof made by the public analyst:—Port wine, 2; vinegar, 2; cheese, 4; milk, 5; butter, 1. All were genuine. The meat inspector has made several seizures, but the circumstances were not suitable for prosecution. It is disgraceful to the authorities and a shameful neglect of duty towards the inhabitants.

FERTILISERS & FEEDING STUFFS ACT APPOINTMENTS.

MR. BAYNES, Hull, the county and borough analyst, has been appointed the district analyst, under the Fertilisers and Feeding Stuffs Act, 1893, for the borough of Hanley, Staffordshire. The appointment has also received the approval of the Board of Agriculture.

ENFORCING THE ACTS IN NOTTS.

AT Bingham Petty Sessions William Goodwin, of Bingham, was charged with selling gin which was adulterated beyond the point allowed by law.—Colonel W. T. Storey stated that on April 30th he called at defendant's public-house at Bingham and purchased a sample of gin. Defendant was out, so he told the daughter that he wanted the gin for analysis. He left one portion at the public-house, another he sent to the public analyst, and the third portion he retained himself. The analysis showed that the gin was 9 per cent. below the standard fixed by law.—Defendant said that he was out when the officer called, and while he was away a youth in his employ had, in attempting to fill the casks, unfortunately put the same amount of water in the gin as in the whiskey. He discovered what the lad had done as soon as he got home and immediately put matters right. He was very sorry that it had happened, but he did not think that a glassful had been sold.—Fined £3.

Thomas Elliott, of Bingham, was charged with selling adulterated milk on the 27th ult.—Colonel W. F. Storey proved the case.—The milk upon being analysed proved 90 parts of pure milk and 10 parts of skimmed milk.—Defendant said his cows had run dry and he had to buy from "Joe" Walker.—The Chairman: How long have you had it from him?—Defendant: Ever since his cow calved, and she calved in our yard not two months ago.—The magistrates said that they must be very particular about milk, as it was everybody's food.—Defendant: "Well, be as good as you can."—The Chairman: You'll be fined £2.—Defendant: What, only £2!—Mr. Milward: We'll make it £5 if you like.—Defendant walked down the court, but returning asked for time, which was refused.

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MILK
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
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SNATCHING A SAMPLE.

At the Thames Police-court on May 24th, William Clarage, 44, in a good way of business as a grocer, in Devas-street, Bromley-by-Bow, was charged before Mr. Dickinson with stealing $\frac{1}{2}$ lb. of butter, the property of Frederick Joseph Anthony, inspector under the Sale of Food and Drugs Act for the Poplar District Board of Works.—William Free stated that on the 21st ult. he was assisting Mr. Anthony, sanitary inspector, and in pursuance of directions he went into the defendant's shop and purchased $\frac{1}{2}$ lb. of ls. butter. He tendered 1s. and received 6d. change. After the payment had been made the inspector entered the shop. Mr. Anthony told the defendant that the witness had purchased the butter for the purpose of analysis under the Sale of Food and Drugs Act. The defendant as soon as he saw Mr. Anthony, seized the butter, which the witness was holding on a plate, leaving a small portion behind. The inspector told the defendant that the small portion would be retained for the analyst, when Clarage seized the remainder and threw it into the tub from which it had been taken.—The witness, in reply to Mr. Young, who defended, said the defendant did not appear to be deaf. He did not see a label with the word "margarine" on the tub, but there was a portion of a label about 8 inches below it.—Mr. Dickinson, interposing, observed that as the case was originally brought before Mr. Mead, he should remand the defendant until that magistrate was sitting.—The defendant was accordingly remanded, and allowed out on his own recognisance.—Later in the day Mr. Dickinson granted Mr. Anthony summonses for assault and obstruction in the performance of his duty.

THE BRITISH MEDICAL JOURNAL ON TINNED LOBSTERS.

WM. BRITAIN, a grocer of North Ormesby, has been fined £10 and costs for selling a tin of lobster, which, on the evidence of Dr. Knott, the medical officer of health, and of the inspector, was black, offensive in odour, and wholly unfit for human consumption. On further investigation, and a visit to the shop, fifteen other tins were in a similar condition, and one at least was "blown," so the prosecution naturally contended that a careful vendor would, from the mere outside appearance, suspect unsoundness. In the opinion of the Bench the case was aggravated by the refusal of the vendor to take back the tin which had been bought, and also the contention of the defendant, even in the face of the evidence adduced, that the lobsters were fit for food.

Cases like these, where there are coarse and unmistakable signs of decay, are really not so dangerous to the public health as those which require some further evidence than those of the senses, and in which an obscure and not well understood fermentation has produced toxalbumins and ptomaines. The supervision of canned goods presents practical difficulties; they are seldom examined until some case of poisoning arises or, as in the present instance, a vendor complains. A simple method of taking a sample from a closed tin without injury to the rest of the contents by exposure to the atmosphere is a desideratum well worth the attention of inventors.

DULCIN.

ROBERT (*Centrabl. f. inn. Med.*, April 21st, 1894) says that pure saccharin is described by many as not being really sweet. Dulcin, discovered by Berlinerblau, has a pure sweet taste, and excels saccharin in sweetness some 200 to 250 times. In structure it is an aromatic urea derivative—paraphenetol carbamide—and is allied to phenacetin. It is soluble in 800 parts of water at 15deg. C., in 50 of hot water, and in 25 of 97 per cent. of alcohol. Experimentally dulcin has been shown to be harmless to rabbits, but in dogs, which are more susceptible to its action, the evidence is somewhat conflicting. From his own experiments on cats the author concludes that doses corresponding to such as would be used in man are harmless; with abnormally large doses the cats became ill, and eventually died with cerebral symptoms. In diabetes it must be used in relatively small doses. Ewald has given it in doses up to 1.5 g. in the day. The author concludes that dulcin in reasonable doses is, as far as we know at present, harmless, and is an advance upon the use of saccharin owing to its sweeter taste. It does not bring about any decomposition of the blood.

THE MARGARINE ACT.

At Blackburn on May 23rd, Mary Hindle, grocer, of 140, Queen-street, Great Harwood, was charged with selling unlabelled margarine, and with selling margarine without the authorised wrapper. P.-c. Burton said he saw a piece of margarine in the shop unlabelled. He asked for a pound of butter, and defendant said, "This is not butter, it is margarine." He then asked her for a pound of margarine, and she served it to him in a plain piece of paper, and charged him 1s. for it. He told her he should report her for exposing margarine unlabelled, and also for using wrappers which were not properly marked. She replied, "Give it me back, and I will put it in a printed wrapper. We have some." Dr. Campbell Brown's certificate stated that the sample contained 75 per cent. of fats other than butter.—In answer to defendant's questions, the officer said that after he had made his purchase the defendant pulled from behind the counter a margarine label, which was suspended by a string from the ceiling, but which was quite a foot wide of the margarine.—Defendant said her girl had pushed the label aside, and forgotten to replace it. She only let the constable have the margarine without the wrapper because he asked for it so.—The Bench said that as it was the first case of the sort in the district they should fine her, as a caution, 2s. 6d. and costs in each case.

GERMAN POTATO SPIRIT.

In the House of Commons on May 29th, the Chancellor of the Exchequer, in reply to Mr. Field, who asked a question as to the conversion of German spirit into so-called Irish whiskey, said: he had not yet been able to obtain the information for which the hon. member asked, but he would endeavour to get it as soon as he could.

Mr. Field: Am I to understand that the right hon. gentleman is pursuing inquiries about this matter, because I do not intend to allow it to pass away?

The Chancellor of the Exchequer: It is not I who have to pursue the inquiry. The inquiry has not overtaken me. I will get as much information as I can, and I will take care the matter is not overlooked.

Mr. Field: This is the third time the question has been on the paper.

WATER IN LARD.

At the County Police-court, Blackburn, on May 23rd, John Carter, grocer and provision dealer, of Park-road, Great Harwood, was summoned for selling adulterated lard.—Mr. Radcliffe (Messrs. Radcliffe and Higginson) defended, and Mr. Withers watched the case for the refiners concerned, Messrs. Shakeshaft and Sons.—P.-c. Burton stated that he bought the lot of lard at the defendant's shop for 6d., and Dr. Campbell Brown, to whom part of it had been sent for analysis, had certified as follows: "The sample contains upward of 6 per cent. of water. Lard often contains as much as $\frac{1}{2}$ per cent., and under 1 per cent., of water occasionally left during the process of refining, but anything above 1 per cent. is fraudulent—that is, more than is usual or necessary." Witness, continuing, said he had received a letter from Messrs. Radcliffe and Higginson, the defendant's solicitors, stating that the defendants relied on a warranty.—Mr. Radcliffe, for the defence said that he adhered to the terms of the letter quoted, in addition to which he would hand to the Bench the invoice received by the defendant of "Eight mugs pure lard." Each one of the eight mugs was, in addition, covered with a large circular label, bearing the words "Genuine beef lard, Castle brand, warranted pure." His client would go into the box and swear that he had every reason to believe that this was pure, genuine lard, without adulteration or water.—Defendant, sworn, said he purchased the lard on February 20th, from his wholesale tradesman. It was from one of the eight mugs of lard referred to in the invoice produced that the officer was served. He bought the lard under a warranty, and each of the mugs bore the large label produced.—Mr. Withers said perhaps the Bench would allow him to say that Messrs. Shakeshaft and Sons were in rather an awkward position. It was scarcely fair for the advocate for the defence to put all the blame on their shoulders when they were not allowed to answer. If his clients were properly before the Court they would be able to show that it was simply the result of the carelessness of one workman, and one man alone, that the water was found. They could not offer any evidence, but he wished to say that it was hard that allegations should be made against his clients without their having an opportunity of defending themselves.—The Bench dismissed the summons.

THE STRAND BOARD OF WORKS & SIR JOHN BRIDGE.

SIR JOHN BRIDGE's recent extraordinary conduct in encouraging frauds by restaurant keepers has been considered by the Strand Board of Works. The Health Committee report that in certain cases brought at Bow-street Police-court by the Board's inspectors against coffee-house keepers for selling butter containing a large percentage of margarine, Sir John Bridge expressed the opinion that the Sale of Food and Drugs Acts were not intended to apply to coffee-shops, and inflicted a fine of 1s. only without costs. This decision would considerably hamper the inspectors in their efforts to enforce the Acts, and the Board agreed to the committee's recommendation that the officers obtain some more samples of bread-and-butter from local coffee-shops, and in the event of adulteration, proceedings be taken against the vendor, and counsel engaged for the prosecution.

THE ADULTERATION OF THOMAS SLAG.

WITH the growth of the popularity of a manure, adulteration as a rule grows too. As it was with guano, so it is with phosphate slags. Considerable quantities of slags now sold as Thomas meal are composed of useless ground phosphates. An instance of flagrant adulteration has recently been shown up by Mons. Loges, of the Pommritz Agricultural Station in Belgium, who submitted to analysis a sample of manure sent to him, bearing the name of phosphate slag. It had all the appearances of genuine phosphate meal, but was in reality composed of ground phosphorites and a considerable percentage of ground coal. The sample was neutral to litmus paper. After the carbonaceous matter had been removed by calcination, it possessed a brown yellow colour, and then contained 15.6 per cent. of phosphoric acid, and 24.1 per cent. of lime, of which 2.48 per cent. was united with carbon dioxide forming 4.43 per cent. of calcium carbonate. The rest was made up of gypsum and calcium fluoride. Heated in a suitable tube, all the characteristic products of the dry distillation of ordinary coal were obtained. Money spent on such manures is only money thrown away, as the ground phosphorites which replace the phosphoric acid, which should be present, have practically no action on the soil. It is only too evident from the foregoing that intending purchasers should in all cases before purchasing phosphate slags in the future have an analysis made, to the mutual satisfaction of both buyer and seller.

THE FOREIGN FOOD SUPPLY.

THE movement spreads rapidly. Here at last we have an English newspaper actually taking a sensible interest in an English question. This astonishing paper is called *The Grimsby News*, and it says the enormous amount of food in the shape of meat, fish, poultry, eggs, dairy produce, vegetables, and cereals—not to enumerate a long list of preserved provisions—which we receive from abroad to satisfy our omnivorous national appetite is, unfortunately as a rule not distinguished from home produce, otherwise the patriotic consumer would suffer from a new form of dyspepsia. Probably even the British farmer, the despairing victim of agrarian depression, does not realise the vastness of our unusual importations, although it fixes the market price of his own corn or cattle. But a growing volume of foreign food is steadily pouring into the Gargantuan jaws of the United Kingdom. We have always held and urged that Lincolnshire might, were her agriculturists a little wider awake, do a considerable share towards a home production which would keep some of the money in our pockets. America has an annual bill against us of eight millions and a quarter. More than half of this—£4,667,000—is paid for live oxen; £3,550,000 is for salt and fresh beef. The balance that remains is for cows. Whatever opinion America may entertain of the old country, her farmers and cattle dealers must know we are their best customers. If, from any untoward accident, war for instance, this market was lost to the United States, their whole agricultural industry would suffer very severely. Australia supplies us with frozen mutton valued at £2,300,000. Unfortunately, colonial export statistics are not so well kept as the Americans, for the New Zealand meat supply is lumped with the Australian. Besides this, Argentina sends us nearly a million's worth of fresh mutton; about half the quantity is furnished by Holland. To summarise lucidly, every man, woman, and child in this country pays eight shillings a year for imported meat, although as a rule they are unconscious of their extravagance. That we should be compelled to import meat is intelligible, but when it comes to the fish supply the argument is not so clear. Let the Grimsby fisherman perpend. The *Pontoon* suggests that we ought rather to export fish than to import it, save in our own vessels direct from the fishing-grounds, yet we pay more than eight hundred thousand pounds a year for fresh fish not caught in British boats. This is a disappointing piece of intelligence for seafaring people. There are British patriots who declare that there is no game in France, and no poultry worth eating. Yet we pay our neighbours more than a quarter of a million for these luxuries. Dairy produce is poured in on us from all points of the compass. We spend about £1 a head annually in cheese, butter, and eggs. If British dairy farming were properly organised, we should probably be able to keep about fifteen millions sterling of this amount at home. Chickens can lay eggs in Great Britain quite as well as they can in France, yet we pay more than a million and a half annually to our neighbours for them; whilst Sweden—where dairy farming has been brought to science—sends us nearly a million and a half pounds' worth of butter. Even half-savage Russia pockets half a million of our money for eggs. We must be very rich to satisfy our big appetite! But surely somewhere there ought to be an opportunity for the former, besides the attraction of growing fruit for jam manufacture. But the biggest bill against us is the corn chandlers'. We annually import twenty-one million pounds' worth of wheat. About half of this comes from America, but India, Russia, Argentina, and Australasia largely contribute. This is the result of packing an enormous industrial population on a comparatively narrow area. It is some satisfaction to find that bread is cheaper and better than it ever has been at any period of our history. British flour makes bread lumpy and expensive. It is gratifying to find the disproportion that existed between Falstaff's expenditure on sack and that on bread does not hold good. For a nation of toppers, our wine bill is not immoderate, being less than five millions and a half. Then, we may go on to remark, something over three and a half million goes in smoke. Great Britain in fact is a greedy, guzzling, tobacco-smoking, and otherwise

luxurious giant, who requires a vast fleet of ships to supply the larder he is constantly emptying. A new weekly paper called the *Senate* publishes an amusing article, entitled "The Mysterious Malady and Death of John Bull." On his decease "a post-mortem examination was held on his body, and there were found inside him five pecks of foreign corn and several lumps of frozen mutton, weighing altogether about two hundredweight and a half." The moral of this premature death needs no commentary.

ADULTERATED ESSENTIAL OILS.

THE American Consul at Messina, acting under instructions, has been investigating the manufacture of essential oils. His report to the Department of State discloses that there is a large traffic in adulterated oils and that the sophisticated article is extensively shipped to the United States, the Consul being reliably informed that American importers expressly connive at this, in fact specifically prefer the adulterated oils. The trade in essential oils is of no inconsiderable volume and for that reason it is highly interesting to learn that comparatively but little virgin oils reach our market. Considering the various uses to which the oils are applied, in medicine, perfumes, confectionery, etc., it must appear that absolute precaution is necessary to prevent systematic imposition.

It is the demand for cheap essential oils that makes the sophistication so general, but some protection should be afforded the purchaser, who is victimised. He is not able to discriminate between the pure and the impure unless by an analytical investigation, and such procedure is not comatable except in special cases.

The Consul reports that practically all of the orange and lemon oils which reach the United States are sophisticated to a great extent. Bergamot, the most costly, is adulterated with oil of sweet orange, turpentine, mineral oil, pitch, and essence of peppermint. Pitch is employed for colouring, and stearin is added to increase bulk and weight. The most important adulterant is turpentine, which is so nearly related chemically to the oil of lemon—both being turpenes—that its presence as an ingredient can hardly be detected by analysis. The best grades of orange and lemon oil go to France and Germany. The French perfumers want quality and are willing to pay for it.

It seems strange to learn that adulterated essences have taken prizes at exhibitions in preference to pure articles. One reason is that their odour is apt to be more agreeable when they are diluted. Oil of lemon, weakened by an admixture of nearly odourless turpentine, has a more pleasant smell than the genuine. A mixture of bergamot with lemon and sweet orange oils is more pleasing to the nose than the plain essence. It is claimed that such oils keep longer when turpentine is added. Sweet orange and lemon oils are the most difficult to sophisticate without detection.—*Paint, Oil, and Drug Review*.

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UN SOUND FRUIT IN COVENT-GARDEN.

THE QUEEN v. DENNIS.—Judgment was given in this case on May 28th. The defendant was a member of a firm of Covent-garden English and foreign fruit and potato brokers, and they sold to a wholesale and retail fruit dealer named Lyons a quantity of Grenoble walnuts in original packages which, upon examination, turned out to be so bad that it was not worth while to go to the expense of separating the good nuts from the bad. At the time of sale nothing in respect to the packages indicated that the major portion of the walnuts were bad, and over the pay desk in defendant's shop there was a placard which stipulated that the purchasers of original packages of foreign fruit and vegetables should sort the good nuts from the bad before selling them. Lyons handed the walnuts over to a sanitary inspector, who took them before a magistrate, by whom they were condemned as unfit for human food, and, having been condemned, were destroyed. At the trial before Mr. Warry, at the Quarter Sessions for the County of London, it was contended by defendant's counsel that no offence had been committed under the Public Health (London) Act, 1891, section 47, under which defendant was proceeded against; that if the defendant had contracted with Lyons in accordance with the placard that he should sort out and destroy the unsound nuts, he would not be guilty of the offence charged; and that the notice in question was evidence of such a contract. It was also stated that the jury should be asked whether the defendant, when he sold the packages of walnuts, intended the bad ones or only the good ones for the food of man. The learned chairman overruled the contention of defendant's counsel, and declined to leave the suggested question to the jury. Further, he directed the jury to find the defendant guilty if they found that he sold the walnuts to Lyons, and that the walnuts were at the time of sale unfit for the food of man, unless the defendant proved that at the time he sold them he did not know, and had no reason to believe, they were unfit for the food of man. He also told the jury that the defendant could not contract himself out of the liability to a penalty under the Act by agreeing with Lyons to sort out and destroy the bad nuts, and they must altogether disregard the notice on the placard. The jury returned a verdict of guilty, but judgment was postponed and the defendant admitted to bail pending the decision of this court on the question whether he was properly convicted.

At the hearing Sir H. James, Q.C., and Mr. Muir appeared for the defendant, and Mr. G. Elliot for the prosecutor, while Mr. Rufus Isaacs watched the case on behalf of a number of City merchants and brokers.

Mr. Justice Kennedy, who, as junior judge, delivered judgment first in view of there being a disagreement, said he had come to the conclusion that the conviction could not be sustained. To sustain a conviction, in his judgment, it was clearly necessary, from the terms of the sub-section, to prove that the article in respect of which complaint arose was found in the possession of the purchaser, and was an article liable to be seized. Now, an article was liable to be seized only if it was an article (1) intended for the food of man, and (2) was exposed for sale or deposited in any place for the purpose of sale or of preparation for sale. The facts of this case showed that these conditions did not exist in this instance, and therefore the nuts were not liable to be seized. Moreover, evidence was produced in regard to the notice and as to the practice of fruit brokers, and it was for the jury to consider whether the walnuts were or were not purchased for the food of man. It was for the jury to say whether Lyons purchased and the defendant sold the sound walnuts only for the food of man, and the learned chairman was not justified in limiting their consideration of the case in the way he did. In his opinion, therefore, the conviction should be quashed.

Justices Bruce, Lawrance, Charles, and Grantham agreed that the conviction should be quashed.

Mr. Justice Cave was of the same opinion, but only on the ground that the nuts were not seizable.

Mr. Justice Matthew, who was in favour of the conviction being affirmed, said it was not denied that the walnuts were unfit for human food, and he saw no reason to doubt that at the time when the defendant sold them to Lyons the walnuts were liable to be seized on the ground that they were intended for the food of man, and were sold to be used for that purpose. In regard to the notice, they were asked to add a proviso to the section, to the effect that the sale of what was unfit for food should be lawful if the seller stipulated that the buyer before re-sale should separate the sound from the unsound portion, and he had no reason to believe the Legislature contemplated any such addition to the Statute. He did not think the seller could in this way shift his responsibility upon the buyer.

Mr. Justice Hawkins delivered an elaborate judgment of a technical character in favour of the conviction being quashed. In his opinion, the sale of an article or its exposure for sale was essential to obtain a conviction, and the jury ought to have been asked to consider the evidence tendered and rejected. If, upon such evidence, they came to the conclusion that the defendant *bonâ-fide* did not intend the bad walnuts for the food of man, and that he sold upon the express condition that they should not be used for that purpose, but should be destroyed, the defendant would have been entitled to an acquittal. He only said, however, that the contract was evidence material to the issue; and, in his judgment, the learned chairman was wrong in his decision. The walnuts were, he thought, not at the time seizable under the section. He recognised to the fullest extent the desirability of punishing those who recklessly exposed for sale food which they knew to be unfit for human consumption, but every man ought to have the fullest opportunity of establishing his innocence. This the defendant had been deprived of.

It was stated that Mr. Justice Wright, Mr. Justice Vaughan Williams, and Mr. Justice Collins concurred in Mr. Justice Hawkins's judgment. The conviction was accordingly quashed, Mr. Justice Mathew dissenting.

MILK TYPHOID IN SOUTH LAMBETH.

So many and such varying statements have been made concerning the recent outbreak of milk typhoid in South Lambeth, that it seems well to place on record the true facts of the case. So far, then, as we can learn, 59 attacks were recorded between mid-March and the end of April, 46 being of residents in the parish, and the remainder in adjoining parishes; the deaths numbering 10. Early in the outbreak the incidence on the customers of one particular dairy led to a very detailed investigation of the various sources of milk supply to that dairy. The task was no easy one, as the dairy is one having a register bearing the names of several thousand customers. By a process of exclusion, Dr. Verdon was in the end able to satisfy himself that the milk arriving at the distributing depot was not infective, since the districts served by one and another source of supply both inside and outside Lambeth showed no special incidence of fever on the houses so served. But as demonstrating that it was the suspected dairy that was the medium of spread of the fever, we need only say that all but four of the total patients were consumers of milk from the implicated dairy. In these circumstances the inquiry was narrowed down to the depot whence the milk was distributed. In the yard of the storehouse was situate a large tank with concrete sides, and next to this tank, and entering into the formation of one of its sides, was a caldron used for boiling water for washing purposes. The water of the tank was much polluted by the dipping into it of pails from stables and cowhouses, besides the brushes used for the washing of wheel spokes, etc. When emptied the tank contained a foul deposit of four inches of offensive matter. The orifice of a yard drain was not many feet away from the base of this tank. Milk stored overnight in the depot was found not to be at fault, above any other, since districts served by the stored milk did not suffer fever to any greater extent than those having other milk. Thus absorption could not be thought of as a means of infection of milk. But here was a polluted water in close proximity to the churns used in the dairy business. Did the tank water contain the typhoid bacillus? And, if so, did the water have opportunity of entry in an unboiled state into the churns? The pity is that these important questions are not answered, so far as we can discover.—*British Medical Journal*.

ADULTERATED COFFEE AT PRESTON.—James Thomas, family grocer, St. George's-road, Preston, was summoned for selling coffee adulterated with chicory. On the 9th April Mr. Marsden, a Corporation inspector under the Food and Drugs Act, sent his assistant to purchase a pound of best coffee, with which he was served by the defendant's daughter. It was afterwards submitted to analysis, when it was found to contain 25 per cent. of chicory. Defendant, who expressed sorrow, was fined 10s. and costs.

WATERING THE WHISKEY.—At the Prestatyn Police-court, on May 21st, Edward Hughes, of the Afonogoch Inn, Trelogan, was charged with having sold a pint of whiskey which had been adulterated beyond the 25 per cent. limit allowed by the Act. Inspector Williams, who purchased the whiskey, produced a certificate from the public analyst which stated that the whiskey had been adulterated to 38 per cent. with water, and coloured with caramel. Defendant said he had bought the whiskey as it was sold. He was fined £2 and 8s. costs.

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THE ASSIMILATION OF NITROGEN.

OUR comprehension of the manner in which the free nitrogen of inorganic nature becomes part of the living body has always been of the vaguest and most unsatisfactory description. The fixation of carbon seemed a simple affair, its affinity for oxygen and for hydrogen, and the affinity of these two elements for each other, made it appear not altogether surprising that living plants should be able to build up from such friendly elements the carbohydrates which form so large a proportion of their bulk. Nitrogen, however, stands on another footing; it is an unfriendly element and tends always to separate itself from combination. While then living forms of every sort hungering for nitrogen have had to make the best use they could of such as they happened to find in combination, the uncombined element has existed in enormous profusion on every side in an apparently useless form. The earth, rather than the air, has come to be looked upon as the only available reservoir of useful nitrogen. We have talked of certain forms of crops exhausting the soil, we have imported vast quantities of nitrogenous manure in the form of nitrates and guano, and we have hoped that by rotation of crops, deep digging, and letting the soil lie fallow, the stores of soluble nitrogen might be brought nearer to the surface and come within reach of the rootlets of our growing plants, for the investigations of Lawes, and Gilbert, and Pugh, thirty-five years ago, had seemed to quench the last glimmer of hope that the free nitrogen of the air would ever be utilisable in the nutrition of plants. Nevertheless, the indubitable fact remained that clover and other leguminous plants possessed the power of enriching the soil in nitrogen, and although this was explained by the hypothesis that their roots drew up stored nitrogen from the deeper portions of the soil, the question how the primeval plants had managed to store this up was left unanswered. For a whole generation the mere suggestion that plants were capable of effecting the assimilation of the free nitrogen of the air was regarded as rank heresy. More recent investigations, however, have, in the opinion of many, tended to supply the missing link, pointing to the connection between the curious nodules found on the roots of leguminous plants, and the well-known power of accumulating nitrogen which these plants possess. These nodules are shown to be the dwelling places of bacteria, which have the property of laying the free atmospheric nitrogen under tribute and presenting it to the rootlets in a form which they are able to assimilate. This is another instance of symbiosis—a biological partnership, not a parasitism, but a living together for mutual benefit. We can thus understand the fact—which, in its practical results, has for a couple of thousand years been known—that leguminous plants, for all the nitrogenous nature of their products, leave the soil more rich in nitrogen than they find it. The further question naturally suggests itself whether these rhizobia, as they are termed, live in symbiotic relationship with other than leguminous plants. This is still under investigation; but whether they do or not, the attempt is being made to induce them to do so. The problem is at present being investigated by Dr. Albert Schneider, at the Illinois Agricultural Experimental Station, and its importance is very considerable as tending to put on a more scientific basis the means at our disposal for preventing exhaustion of the soil. To biologists, however, the great interest of these researches lies in the fact that they tend to make the cycle of life complete, and place the circulation of nitrogen, from the inorganic to the organic and back again on the same footing as that on which the transformations of carbon have long been established.—*British Medical Journal*.

A RAID UPON IRISH WORKHOUSE CONTRACTORS.

At Athlone Petty Sessions Thomas Finneran was summoned at the instance of the Guardians of the Athlone Union, for the adulteration of new milk.

Mr. P. R. Kelly produced the bond under which the defendant was bound to supply "pure new milk," to the workhouse at 7d per gallon. He produced the certificate of Dr. Cameron showing the result of his analysis which was that the milk had been adulterated to the extent that 25 per cent. of fats had been abstracted; also that it was a debased article.

Mr. Longworth said that the fines that had been inflicted for first offences had not the necessary effect. The adulteration of this milk was not only a heartless fraud on the poor people of the workhouse—this milk being one of their principal articles of diet—but it was also a fraud on the ratepayers who paid the cost of the maintenance of these poor people in the house, and who expected that they would get provisions in accordance with the advertisement that had been issued.

A fine of £3 and £1 costs was imposed.

Same complainants *v.* John Finneran.

In this case Sir Charles Cameron certified that 30 per cent. of the fats had been abstracted, and that it was a debased article.

A similar penalty was imposed—£3 and £1 costs.

Same complainants *v.* Patrick Finneran.

In this case also Sir Charles Cameron certified that 30 per cent. of the fats had been abstracted.

A similar ruling was made—£3 and £1 costs.

Defendant: I will not pay the fine.

Mr. Longworth: Then you will have to go to Tullamore Gaol for one month.

Defendant: I will not pay the fine; I will appeal.

The Clerk: You can consult with Mr. Fair in that matter. The ruling is made.

Same complainant *v.* James Doolan.

In this case Sir Charles Cameron certified that 22 per cent. of cream had been abstracted.

A similar rule was made—£3 fine and £1 costs.

Same complainant *v.* James Macken.

In this case Sir Charles Cameron certified that 18 per cent. of the cream had been abstracted.

A similar ruling was made—£3 fine, and £1 costs.

THE SELECT COMMITTEE ON ADULTERATION.

In the House of Commons on May 28th, Mr. Shaw-Lefevre said that some little time ago he received a deputation on the subject of adulteration of dairy products, and after consulting with his colleagues he intimated that the Government would give its consent to the appointment of a select committee. Since then another deputation had urged the widening of the inquiry into the general subject of adulteration, and he could not well do otherwise than assent to this wider committee.

POISONING BY COUGH MIXTURE AT DARLINGTON.

ON May 28th, the Deputy-Coroner, Mr. Badcock, held an inquest at the Darlington Hospital on the body of Thomas William Alderson, aged four years, son of Mr. Thomas Alderson, of Eldon-street, Darlington, who died at the Hospital on Sunday morning. Mrs. Alderson, mother of the child, said the child was suffering from a cold, and on Wednesday she got some mixture from Mr. Wilson, chemist, North-road. On Friday she got a fresh supply of the same mixture, and gave him a teaspoonful on Friday night without water. He seemed all right after that. On Saturday morning about half-past nine she sent deceased upstairs for the bottle, and he took a dose himself. He appeared to have taken four to five teaspoonfuls, judging by the quantity left in the bottle. Before taking the medicine he was very sick. He went out to play after taking the medicine, and was out till about a quarter-past eleven. Then he sat down in the chair and seemed to be drowsy, and she sent him to bed. About two o'clock she noticed something strange in his appearance, and, taking him out of bed, she ran down stairs with him. She then sent for Dr. Lewis Eastwood, who looked at him and said, "The child's dying." Dr. Eastwood took him to the hospital.—Mr. John Wilson stated that he supplied the mixture contained in the bottle produced. There was 1/20th of a grain of morphia in each drachm, that was a teaspoonful. The other ingredients were quite simple. The label said the dose was from a half-teaspoonful to a teaspoonful. A teaspoonful would be quite harmless. It was very pleasant to take, and a child might be fond of it. He judged from the quantity the child was said to have taken that he got about one-sixth of a grain, or a little more than the non-poisonous adult dose. He always asked whether the mixture was for a child, and the age of a child, and then explained that to be taken occasionally meant night and morning, or, if the cough was a very violent one, it might be given three times a day with perfect safety.—In reply to the remark of a juror that the child himself came for this medicine, Mr. Wilson said that unfortunately in that neighbourhood a great many children were sent for things, but he exercised every care. The proper dose could do no harm. Mr. Coatsworth, from whom he took the business, sold the mixture for twenty years, and he had sold it for twelve, and this was the first time anything of this sort had occurred. He sold a different mixture for infants.—The Coroner suggested that in future it would be better to add to the label, "This mixture contains a preparation of morphia, and is to be used with care."—Mr. Wilson said he would do that.—Dr. John Aird Yuill, house surgeon at the hospital, said that when he saw the child at four o'clock on Saturday it was in a comatose state and the symptoms suggested morphia poisoning. He did all he could for 12 hours to save the child, but without avail. He could not say that the amount taken by the child was a fatal dose. Probably if the child had been dealt with at once, and the poison got off its stomach, it might have been saved.—A juror pointed out that all the labels in the world would not have stopped the child from taking too large a dose.—The jury found that death was due to accidental poisoning with morphia, and desired a recommendation to be made to all chemists that no mixture containing morphia should be sold without a label setting forth the fact being attached to the bottle.

CORRESPONDENCE.

THE QUALITY OF LONDON MILK.

To the Editor of FOOD AND SANITATION.

May 25th, 1894.

SIR,—In your issue of the 12th inst., you state on page 148, that "pure milk in London is practically unobtainable save from the Aylesbury Dairy Trade." This I consider an insult to very many members of the trade, including myself. I have been in the dairy trade for 27 years, have had some hundreds of samples taken by the public inspectors, and have never had any complaint from anyone of the authorities respecting them.—Yours faithfully,

WM. GLOVER.

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South Kensington, S.W.

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Food and Sanitation.

SATURDAY, JUNE 9TH, 1894.

SOMERSET HOUSE AND VINEGAR.

THE important prosecution for vinegar adulteration at Sheffield, reported in another column, raises what is, for manufacturers of genuine vinegar, a very serious question. The solicitor in this case, knowing by experience the analytical ignorance of the Somerset House chemists, pressed that the sample in question should be referred to them for analysis, although it was testified to as being adulterated by two of the foremost analysts in the kingdom. The true reason why this solicitor was so persistent in his demand that Somerset House should report upon that sample was not publicly stated, but it is one which, to those who have followed the prosecutions for vinegar adulteration, is of the first importance. The defendant's solicitor desires the assistance of Somerset House because he has had experience of the utter worthlessness of the ignorant Government chemists, and of the fact that they are quite incapable of making an accurate analysis. He has reason for such confidence, inasmuch as it is only a short time ago since he was concerned in a case in which the *manufacturer acknowledged the presence of 50 per cent. of pyroligneous acid in a vinegar which, on being referred to Somerset House, was declared to be genuine vinegar.* It is therefore a pretty safe assumption on the part of the solicitor in the present case that, as Somerset House have before passed 50 per cent. of pyroligneous acid as genuine vinegar, the odds are great that they will now stretch a point and pass 80 per cent. as genuine. There is, however, an important element which has been left out of consideration in this calculation, that the chemical *ignorami* who passed 50 per cent. will do the same with 80 per cent. Since the 50 per cent. case the wretched actors in England's analytical farce appear under entirely new management, and the reputation of their new *impresario*, Professor Thorpe, is one that should render a recurrence of such dangerous blundering impossible, *i.e.*, if the professor himself really overlooks the work of the trio who sign Somerset House certificates. The instance we have given is not an isolated one with regard to vinegar. It is only a few months ago since in another case at Bedlington these analytical curiosities declared that a substance corresponded to a commercial malt vinegar, which was not malt vinegar, or even a vinegar made from unmalted grain. Their ignorance, however, not only enabled the vendors to escape punishment, but gave the manufacturers of the alleged pure malt vinegar an opportunity of issuing lying circulars and advertisements to grocers everywhere throughout the kingdom alleging their vinegar to be pure malt vinegar—which it most certainly is not—and quoting the certificate of the Somerset House incapables to bolster up their mendacious assertions. Naturally enough the Bedlington magistrates, not knowing how wretchedly incapable the Somerset House pseudo-analysts were, felt awed at the sight of a certificate signed by *three government scientists*, and discredited the accurate one of the Newcastle analyst. Thanks to our exposures, the sale of pyroligneous acid as vinegar has been well-nigh killed. It will be a serious thing for genuine vinegar brewers if Somerset House chemists' ignorance gives it a new lease of life, and their action in this case is one that needs careful watching, affecting as it does the whole question of the purity of vinegar and the business of every firm who brew genuine vinegar.

GINGER NOW DECLARED NOT AN ARTICLE OF FOOD.

SOME POINTS FOR OUR JUDGES.

As a consequence of the absurd decision of Justices Hawkins and Lawrence that baking powder is not an article of food, it is now freely sold adulterated with alum, etc., and the success of the contention in the case of baking powder caused the same plea to be raised with respect to yeast, with the result that yeast has also been regarded as not being an article of food, and a free hand is thus given to adulteration in this article. We are not, therefore, surprised to find this legal stupidity carried a stage further, as it is self-evident that if yeast or baking-powder are not articles of food, for the reason that they are not eaten as such, ginger, pepper, mustard, and a host of substances are not articles of food, none of them being eaten as food, their use being that of condiments. This contention was successfully raised at Gateshead on May 31st.

J. R. Hood, grocer, Dunston, was summoned for having sold ginger as pure ground ginger, when it was adulterated with 30 per cent. of exhausted ginger.—Inspector Laidlaw prosecuted for the Durham County Council, and Mr. R. Nicholson, Morpeth, defended.—Inspector Laidlaw's assistant stated that on the 6th of March he went to the defendant's shop and asked for six ounces of ground ginger. It was served to him, and was submitted to the public analyst, and he ascertained it to be mixed with 30 per cent. of exhausted ginger.—Mr. Nicholson submitted that ground ginger was not an article coming under the definition of food. In his opinion it was akin to baking powder, and, as they all knew, Justice Hawkins had given an important decision with regard to that article. The ginger had been supplied to Mr. Hood by Messrs. Byers and Young, of Newcastle. They obtained it from Messrs. Pantin, of London, and, as their worships would see, the tin bore the words "superior ground ginger; warranted genuine." It could not be expected that Mr. Hood, after purchasing a few tins, would have the article analysed when the tin bore such a warranty as that. The assistant had merely asked for ground ginger, and he (Mr. Nicholson) submitted that, viz., he simply asked for ground ginger and got ginger, he received what he asked for. He maintained that the words on the tin constituted a sufficient warranty for his client; but, independent of that, the words of the Section said, "An article of food," and his main defence was that it could not be considered that ground ginger was such. Justice Hawkins, and he was supported in his opinion by another able judge, had recently decided that baking powder could not be considered an article of food, and, so far as his judgment was concerned, he thought it naturally followed that ground ginger was upon the same lines. His lordship laid down as a fact that nobody eats baking-powder, and, as a food by itself, he (Mr. Nicholson) held that nobody was accustomed to eat ground ginger. With respect to the warranty, he submitted, after a recent decision of Justice Stephens on articles of the kind and on labels on tins, that the label on the tins constituted the *bona fides* of the defendant.—The Chairman said the Bench had given the case their greatest consideration; and, taking all the circumstances into account, they had come to the conclusion not to convict.

Now that a committee has been appointed to inquire into the whole question of adulteration, the effect of this decision must not be lost sight of, the more so because it

seems as though the judges really strive at all points to make it easy for the unscrupulous to impose upon the public. For instance, in the unsound fruit case decided last week, Mr. Justice Hawkins stated that "if the defendant had sold the walnuts on the express condition that they should not be used for the food of man until the *bad walnuts had been separated from the good ones and destroyed*, the defendant would have been entitled to an acquittal." It must appear astounding to any person of average intelligence that ten presumably thinking men of trained legal minds could be found to support so stupid a contention. We venture to say that its utter absurdity would be instantly apparent to even the least educated Covent Garden porter. We wonder if these ten judges considered for a moment what walnuts are? According to Mr. Justice Hawkins they are of the same character as oranges, for he said "I have personally entertained a doubt during the consideration of this case, when articles of food of the same character—for example, oranges—some portions of which are good and some bad, are mixed together, but the bad are severable from the good, and are not in such proportion to the good as to make the whole unfit for human food, how the sanitary inspector and the justices ought to deal with them." It did not strike his lordship nor any of his ten colleagues that this was neither more nor less than ignorant nonsense. A glance at a box of oranges enables a purchaser to detect the good from the bad, but it should surely be apparent to even so feeble an intelligence as that of Mr. Justice Hawkins, that it is impossible to sort good walnuts from bad in the way oranges, apples, etc., are sorted. *The purchaser could only separate the good from the bad by cracking each nut*, which, in itself, is an absurd supposition. It is plain, therefore, that the nuts were bought on the understanding that they were sound, and that they were bought as food for man, and that no question of sorting entered into the sale, inasmuch as such sorting was impossible. It is a curious satire upon the ability of our judges that there should have been only one—Mr. Justice Mathews—capable of grasping so plain a question as that here involved. But the fact that the law allows judges to make the law a farce upon points of this kind must not be lost sight of in connection with the inquiry into food adulteration, and care must be taken to have it made clear that all articles used with food, or that enter into its composition, whether they be leavening agents or condiments, are placed beyond question under the Adulteration Acts.

THE PHARMACEUTICAL SOCIETY *v.* POWELL. ALLEGED INCORRECT ANALYSES.

THE following letter *re* Powell's Balsam of Aniseed has appeared in the *Pharmaceutical Journal*:—

"COMPOSITION OF BALSAM OF ANISEED.

"Sir,—It appears from the report of the annual meeting of the Pharmaceutical Society published in your columns that the president thought it right to refer to "Powell's Balsam of Aniseed," and to alleged variations in the quantity of morphine contained in it. As the subject of the sale of this preparation is still under the consideration of the courts, we should have desired to have refrained from discussing it in the press; but the wide publicity given to the President's observations is calculated to cause misapprehension amongst many of our friends and customers. We therefore beg that you will give us the opportunity of stating that our preparation has been made from the same formulæ for upwards of seventy years without the slightest deviation, and the care in selecting the ingredients, coupled with the careful process used in compounding it, renders the suggested variations absolutely impossible. The only explanation we can assign for the differences in analyses is that the analyst must have made a miscalculation, a mistake easily made when determining so minute a quantity in an admittedly difficult analysis.

"London.

"THOMAS POWELL, LD."

It will be noted that Messrs. Powell allege that the Pharmaceutical Society have taken a case against their preparation into court, and have put in as evidence analyses that are incorrect. Upon the faith of these alleged inaccurate analyses, the president of the Pharmaceutical Society and the leading medical journals have uttered and written warnings alleging dangerous variations in poisons, etc., all, of necessity, damaging to Messrs. Powell. The

charge in Messrs. Powell's letter is a serious one, and if true, would prove that the analyses produced in courts of justice by the Pharmaceutical Society are untrue, and should be so regarded by magistrates and others. Such a charge demands, therefore, a better answer than the following, which the editor of *The Pharmaceutical Journal* makes to Messrs. Powell's statement:—

"While inserting this letter for the satisfaction of Messrs. Powell, it is proper to state that the remarks made by the President at the annual meeting of the Society were based on the evidence given at the hearing of the cases reported in this Journal at pages 652, 655, and 677. It is also necessary to add that the particulars mentioned as to variation in the amount of morphine are quite independent of the point of law referred to as being still under the consideration of the courts, viz., whether a preparation admittedly containing morphine is a poison within the meaning of the Pharmacy Act?—(Ed. *Pharmaceutical Journal*.)"

This answer is neither more nor less than a paltry shuffle. If the analyses in question were correct, the Pharmaceutical Society ought to *prove its statements*. If they were incorrect then the Pharmaceutical Society ought to have sufficient honour to confess its ignorance, and to make the *amende honourable* to the firm it persecuted. If it does neither the Pharmaceutical Society's conduct in this case will have a very sinister look.

THE LONDON AND NORTH WESTERN RAILWAY COMPANY FINED FOR ADULTERATION.

AT the Wolverhampton Police-court on May 30th, before the Stipendiary (Mr. Neville), the London and North-Western Railway Company were summoned under the sixth and ninth sections of the Food and Drugs Act for selling milk in an altered state, without notice of alteration. Mr. F. Allwood prosecuted, and Mr. F. L. Lambert, of Euston Station, defended. Mr. A. Turton appeared on behalf of the seller who supplied the milk to the company, although he said he had no *locus standi*. Mr. Allwood, inspector under the Food and Drugs Act for the borough, stated that on April 24th, he called at the refreshment room of the High Level Station, Wolverhampton, and purchased a glass of milk for 2d. The cost of the milk was rather in excess of the price paid in the neighbourhood. The Stipendiary intervened, and remarked that it was a privilege railway companies had. Mr. Allwood, continuing, said that he submitted the milk to the analyst, and had received a certificate stating that 20 per cent. of its original cream had been removed. The milk which he purchased at 8 p.m. had arrived at the refreshment room at eleven or twelve in the morning. It was one of the company's rules to stir up the milk from time to time so that the cream should not settle at the top of the milk. Mr. Lambert, on behalf of the company, said that the defendants had taken stringent precautions to comply with the provisions of the Act. At Wolverhampton they had to rely on a local dealer for the milk supply, and since the summonses had been issued he had learned that the man who supplied the milk did not keep cows himself, but bought the milk and re-sold it. The quantity of milk sold at the Wolverhampton Station was small, as it was under a gallon per day, and the number of glasses of milk sold ranged from one to twelve per day. Mr. Lambert handed to Mr. Neville a guarantee from the dealer of the milk as to its pureness. The Stipendiary contended that the company were responsible to the public for the genuineness of the milk, and imposed a fine of 20s. and costs on one summons only.—In the same court, Clara Bowen, daughter of the tenant of the Darlaston Green Coffee House, Darlaston, was summoned for selling milk adulterated to the extent of 22 per cent. of added water, and with 40 per cent. of its original cream extracted. Harold Van Tromp, chief inspector *pro tem.* of food and drugs for the county, stated that, on the 27th April, he called at the coffee-house and purchased a glass of milk, which he forwarded to an analyst, with the above result. Defendant stated that a few minutes before the inspector came into the shop, the milk had been bought from the Midland Dairy Company. Mr. Neville considered it a very bad case, and fined defendant £5 and costs.—Henry Phillips, of 41, High-street, Moxley, Bilston, was summoned for selling milk in an altered state without notice. Mr. Van Tromp gave evidence showing that a sample of milk that he bought at the defendant's shop had had 30 per cent. of its fat extracted. A fine of £3 and costs was imposed.

FIFTY PER CENT. CHICORY FOR PURE COFFEE.

AT Barnsley, on May 30th, Clement Waring, shopman in charge of the Globe Tea Company's Stores, Darton, was charged with having sold adulterated coffee. Mr. W. E. Raley defended. Mr. Bundy, inspector under the Foods and Drugs Act, deposed that he visited the shop on the 19th ult., and purchased half a pound of coffee for 10d. Defendant asked him if he required a mixture, and he replied that he wanted pure coffee. The coffee was supplied and divided in three parts in the usual way. Mr. A. H. Allen, county analyst, had analysed one portion and certified that it was adulterated with 50 per cent. of chicory. The Bench thought that such a mistake might be made, but the public had to suffer.—A fine of 10s. and costs was imposed.

BASS'S BEER PROSECUTIONS.

In the Chancery Division on May 31st, before Mr. Justice Stirling, Mr. John Cutler moved on behalf of the plaintiffs, Messrs. Bass, Ratcliff, and Grettton, the well-known brewers of bitter beer, against Mr. Butcher, the proprietor of the White Lion Hotel, Chippenham, for an injunction to restrain him, until the trial or further order, from passing off, or attempting to pass off, ale or beer not brewed by the plaintiffs as and for the goods of the plaintiffs.—Mr. Cutler said that in consequence of complaints made as to the quality of bitter ale bought or asked for at the house in question, the plaintiffs had sent some person to the White Lion, who ordered Bass's pale ale, and were supplied with pale ale, which they took away, and which was afterwards analysed and turned out to be not the plaintiffs' ale. He, therefore, now moved for an injunction, but he was instructed that the defendant appeared by counsel, and consented to treat this hearing as the trial of the action, to submit to a perpetual injunction and pay the costs, in which case Messrs. Bass waived their claim for an account of profit and damages. The learned Counsel said that his clients had received a letter from the defendant's solicitors, saying that the writers had just heard from their client, who consented to submit to a perpetual injunction with costs, and that he would instruct counsel accordingly on the motion, which could be treated as the trial of the action, but as yet counsel for defendant had not appeared.—The Judge said if Mr. Cutler found that counsel had been so instructed to that effect he need not mention it again, and the order would go, treating the hearing of the motion as the trial of the action; but, in case of difficulty, it might be mentioned later in the day.

BASS v. WHITE.—Mr. Bousfield, Q.C. (with him Mr. John Cutler), said that he had a similar application to that which his friend Mr. Cutler had just made.—Mr. Young asked that the motion might stand over for affidavits.—Mr. Bousfield said that in that case he must ask his friend to give an undertaking; but this Mr. Young declined to give, as he knew as yet nothing about the case.—Mr. Bousfield: Then he must move *ex parte*; but this Mr. Young submitted he could not do after giving notice of motion.—Mr. Bousfield said he felt sure that his friend would not say that it was right to sell Allsopp's beer for Bass's.—The Judge asked to see the affidavits, which were accordingly handed up.—Mr. Bousfield said that Messrs. Bass and Co. had reason to believe that there had been a practice of supplying other beer when Bass's beer was ordered, and they instructed agents to test the matter on their behalf, and the affidavits gave in detail the different occasions on which one or other of these gentlemen ordered Bass's beer and were served with Allsopp's. They went to the defendant's house and asked for Bass's beer—generally as “a small Bass,” and they observed that a bottle of Allsopp's beer was taken from another place, the bottle being attempted to be held so that the label should not be seen, and that was supplied as Bass's beer.—The Judge said it appeared from the first affidavit that the act occurred on May 18th, and they evidently had not thought it worth while to apply *ex parte*. The motion must stand over till next week.

BASS v. KEYS.—Mr. Bousfield said this case stood on a similar basis to the last.—Mr. Warmington, Q.C., said that it did not stand on a similar basis. He complained of the way in which it had been treated. They had applied to Mr. Justice Kekewich for special leave on May 24th, but had not supplied his client with affidavits until the 29th.—This case was also directed to stand over.

Mr. Bousfield said he had still another motion, in an action of “*Bass v. Riddle*,” which, under the circumstances, he would agree to stand over for a week.

ADULTERATED CHEESE.

At Liverpool Police-court, on May 30th, George Scott, of the Cow Buttering Stores, Scotland-place, appeared to a summons charging him with having sold, to the prejudice of the purchaser, cheese which was not of the nature, substance, and quality demanded by the purchaser. Mr. Moss supported the information, and Mr. A. J. Mackay defended. Inspector Adams said that on the

2nd ult. he went to the defendant's shop and purchased a pound and a half of cheese. The defendant told him that the article sold to him was good cheese.—Inspector Baker also gave evidence, stating that the defendant told him that the cheese was labelled. On examining the wrapper he found the words “Sold as skim-milk cheese, enriched with oleo.”—Dr. Campbell Brown's analysis of the cheese showed that upwards of 15 per cent. of beef fats had been added to skim-milk cheese to conceal the inferior quality of the cheese.—Mr. Mackay contended that there had been no deception practised in this case by the beef fats being added to conceal the inferior quality of the cheese.—The Stipendiary remarked that when one asked for cheese and was supplied with skim-milk cheese he ought to be told that it was such. Surely it was easy enough to say, “This is skim-milk cheese.” This had been a breach of the law, but it seemed to him that the defendant had thought he was complying with the law. He imposed a fine of 10s. and costs.

RATTLESNAKE POISON FOR DIPHTHERIA.

The *Boston Medical and Surgical Journal* is responsible for the following tough story:—“The following description of the initial steps in the securing and preparing of the ‘mother tincture of crotalus horridus’ receives the sanction of two homœopathic medical journals. A box of twenty-four large rattlesnakes was received by a museum proprietor in Rochester. Having provided a long hempen cord, a bottle of ammonia, and some whiskey, ‘to be prepared for an emergency,’ the owner, known as ‘Rattlesnake Pete,’ unfastened the lid of the box, and, as a large snake darted out, seized it by the neck and carried it to a table, while the long lithe body coiled round his arm and the rattles were ‘singing away like grasshoppers.’

“Now comes the interesting part of the performance. A piece of common window glass was placed near the snake's open mouth, and the rattler struck his wicked-looking fangs, which were nearly an inch in length, against the glass, a thin stream of yellowish looking liquid spurring upon it at each stroke. ‘Oh, he's full of it!’ said Pete. ‘There's poison enough right there to kill twenty men.’ While he spoke he walked toward the den, and, giving the snake a twist, released him. The poison on the glass was absorbed with sugar of milk, scraped into a bottle and carefully sealed. The poison thus obtained is sent to certain London homœopathic physicians, who use it in their practice as a medicine for diphtheria and other diseases of a similar nature. The poison is supposed to be very valuable. The process just described was repeated with snake after snake, until all in the box were transferred to the den. After the first three or four were taken out Pete plunged his hand among the mass of wrigglers with seeming impunity, dragging out his next victim with a quick but certain motion. ‘These fellows will give up their poison more readily to-morrow; they are a little sluggish on account of having been kept in such close quarters for the past forty-eight hours,’ said Pete in response to the writer's query. ‘Besides selling the poison which I have told you about,’ added Pete, ‘when a snake dies I fry out the fat of the reptile and obtain from one and a half to two ounces of a very penetrating oil from a fair-sized snake. This oil is worth 8 dols. per ounce, and is used as a specific for deafness.’”

ALLEGED ADULTERATION OF LARD.

At the Swansea County Police-court on May 30th, Hannah Thomas, a grocer, of the Cockett, was summoned for selling adulterated lard. Mr. Viner Leeder, who defended, showed a warranty from Messrs. James Jones and Co., from whom defendant purchased the lard, and a further invoice showing that it was sold by Messrs. Jones as they received it. The case was dismissed.

THE MARGARINE ACT.

SARAH GORMAN, provision merchant, 29, Lyon-street, admitted, before Sheriff Birnie, on May 29th in Glasgow Sheriff Court, having failed to wrap up some margarine in the proper wrapper. She said it was purely a mistake, as she was not accustomed to serve out margarine. Mr. Lindsay, the prosecutor, said it was a miserably poor quarter of the town where the shop was situated. The Sheriff imposed a fine of 30s., but gave her a month to pay.

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IMPORTANT VINEGAR PROSECUTION. SOMERSET HOUSE APPEALED TO.

AT the Sheffield City Police-court on June 1st, before Mr. J. Robertshaw, Mr. F. P. Rawson, and Mr. Isaac Milner, a vinegar manufacturer, named Thomas Congreve Marshall, of No. 10, Netherthorpe-street, was summoned for having sold to William Henry Harrison, an inspector of nuisances, on April 2nd, 12½ gallons of vinegar which was not of the nature, substance, and quality of the article demanded, such vinegar being composed of 20 per cent. of malt or grain vinegar, and 80 per cent. of diluted acetic acid, not derived from malt or unmalted grain. Mr. H. Sayer, the Deputy Town Clerk, conducted the prosecution, and Mr. A. Neal defended.

Mr. Sayer said there had been a number of similar prosecutions, but this one was somewhat remarkable, for it was not the retailer who was summoned, but the manufacturer. On April 2nd an inspector of nuisances proceeded in a trap to the defendant's premises, and driving into the yard saw a man named George Radford, whom he ultimately asked for a 12½ gallon cask of malt vinegar. The man said Mr. Marshall was out, but he could serve him just as well. The cost of this was 15s. 4d., of which 7s., was for the barrel. When told that it was for analysis, but not before, Radford stated that he had no power to sell. Mrs. Marshall said the same. They refused to accept a portion of the vinegar bought. A sample of the vinegar was sent to Mr. A. H. Allen, the city analyst, who certified that it was composed of 20 per cent. of malt vinegar and 80 per cent. acetic acid, not derived from malt. Therefore only a very small portion was vinegar produced by the proper process—fermentation—the acetic acid being produced by the distillation from wood and was often called pignoneous acid. That might be a useful mixture in its way, but it was not vinegar, and more particularly malt vinegar, which must be prepared by the fermentation of malted or unmalted barley, or other grain. Vinegar was made from various things, and in his opinion ought to have distinctive names to show whether it was made from wood, grain, wine, beer, or other things. He considered the sample would be properly described as an acid vinegar substitute. Malt vinegar had an agreeable taste and smell, which was entirely wanting in this mixture, and what was very important was that the latter could be produced at a trifling cost, something like 1½d. or 2d. per gallon, whilst it was sold at the same price as malt vinegar.

Mr. Neal: Are you going to prove that? The Deputy Town Clerk: Yes.

William Henry Harrison, one of the inspectors of nuisances, said he visited the defendant's premises on April 2nd at noon, driving there with a pony and trap. He went into the defendant's yard and saw a man named George Radford.

Mr. Neal objected to the witness detailing the conversation that took place with Radford. The man had no authority to sell the vinegar, and as a strict matter of law a conversation in the absence of the defendant could not be given as evidence.

Mr. Robertshaw said the magistrates thought Radford might be construed to be an agent.

Mr. Neal: By the authority of the defendant?

Mr. Robertshaw: He was on the premises and apparently the only person in charge.

Mr. Neal contended that there was nothing to show that the man was authorised to act.

The magistrates decided that Radford was the agent and

Mr. Neal said he should ask them to state a case on the point. It looked very much like a trick to visit a wholesale dealer's premises in his absence and get goods.

The witness proceeded with his evidence as detailed by Mr. Sayer, but later on the question as to its being admissible again arose.

Mr. Neal contended that the magistrates must have some evidence that Radford was authorised to sell, and that he was properly appointed.

The magistrates retired for a time, and on returning Mr. Robertshaw said they were of opinion that the man was the agent of the defendant.

Mr. Neal: You don't say properly appointed.

The Deputy Town Clerk: No.

Inspector Elcock corroborated Harrison's evidence.

Mr. A. H. Allen, the city analyst, said that on April 2nd he received a cask of vinegar from the inspector, and took a portion of it for analysis. He sealed up a portion and returned it to the inspector together with his certificate. He found that the sample was not genuine malt vinegar. It did not contain more than 20 per cent. of malt vinegar, and the balance was acetic acid, which, in his opinion, had been distilled. He did not think the liquor should be called vinegar at all.

Cross-examined:—Mr. Allen said he obtained the following figures by the analyses of the vinegar:—

Specific gravity	...	...	...	1.0110
Acetic acid	...	...	...	4.07
Total extractive matter	...	...	...	1.60
Ash	...	...	...	0.069
Alkalinity of soluble ash	...	...	...	0.014
Phosphoric acid	...	...	...	0.010
Sulphuric acid	...	...	...	0.041
Nitrogen	...	...	...	0.014

Mr. Neal: Is acetic acid the basis of all vinegars, malt or otherwise?—Yes, the same as alcohol is the basis of all wines.

And chemically and analytically pure acetic acid is the same whether derived from distillation of wood or any other process?—Pure acetic acid from any source would be the same, just as pure alcohol is the same whether produced from brandy whisky, or other sources.

The suggestion in this case is that the vinegar has been adulterated by the addition of the true basis of all vinegars?—My suggestion is that this vinegar has been made from a mixture of a small proportion of malt vinegar and a large proportion of acetic acid from some other source.

Are you prepared to swear that there is 80 per cent. of acetic acid derived otherwise than from malt or unmalted grain?—Yes, and I have a strong opinion that I over-stated the quantity of real malt vinegar there was present.

Suppose you added distilled malt vinegar to the original malt vinegar, would you not get exactly the same result as in this case?—Yes, in proper proportions I should get a result which I should not be able to distinguish from this. But it would not be a commercial product, and the preparation could not be made to sell at the price the defendant sold his concoction.

Will you swear this sample is not vinegar?—I won't swear absolutely as to the source of the 80 per cent., but I hold a very strong opinion that it is not vinegar.

Do you say it is adulterated malt vinegar?—Yes.

Do you derive your opinion from the lowness of the phosphates and nitrogenous matter?—There are four or five data quite in compatible with this being malt vinegar.

Replying to further questions, Mr. Allen said the presence of phosphates and nitrogen in excess was detrimental to vinegar keeping, and by some vinegar firms they were abstracted as much as possible. There was nothing detrimental to the public health in the sample.

Mr. Neal now applied for permission to send a portion of the sample to Somerset House for analysis, and in doing so said he did not wish to make any imputation against Mr. Allen.

Mr. Otto Hehner, analytical chemist, London, said he examined a portion of the vinegar sent him by Mr. Allen, and came to the same conclusions as Mr. Allen had done.

By Mr. Neal: The mixture might be vinegar, but it was decidedly not malt vinegar. Mr. Allen had had more experience in those cases than anyone in London, including Somerset House. It was absurd, in his opinion, to appeal to gentlemen, whatever their official position might be, who could not have had a tithe of Mr. Allen's experience.

Mr. Sayer objected to a sample being sent to Somerset House, and urged that the evidence of two experienced gentleman was sufficient. Their analysis had been in no way challenged. The defendant's agent, and subsequently his wife, were repeatedly offered a portion of the sample, but they refused to have it. If Mr. Neal dared to put the defendant into the box, and he denied the substantial accuracy of the analysis, there might be said to be a conflict of testimony which would justify the reference of the sample to Somerset House, but if this course were not taken there was no adequate grounds for conceding to the application.

Mr. Robertshaw said the magistrates were of opinion that the evidence was so strong it would not be at all acting unfairly towards the defendant if they refused the application.

Mr. Neal said it was the first time he had ever heard of a bench refusing such an application. He was quite sure that after the decision anything he could say and any witnesses he might call would not affect the magistrates. He protested against the action of the Corporation, who dare not let the city analyst's results be tested by the Somerset House officials. If the magistrates were still of that opinion he should only say that such a penalty as they imposed the defendants must pay.

The magistrates retired for a time. On returning, Mr. Robertshaw said they should not like it to go forth that there was the slightest scintillation of unfairness in the administration of justice, and therefore, although the magistrates felt that the evidence given would not be upset, they would grant Mr. Neal's request.

The case was then adjourned until June 29th.

A QUESTION OF CERTIFICATE.

AT Dartford, Edward Coles, of the Anchor Inn, Bridgend, was summoned for selling rum which was 27.41 under proof, 25 per cent. under the legal limit. Inspector Tucker proved the purchase. Mr. Ridley, for the defence, objected that the analyst's certificate did not specifically state that the rum was adulterated with water, and contended that it was not sufficient to simply state that it was under proof. The case was dismissed.

The magistrates here appear to be very accommodating over fines. George Dean and Albert Dean, trading as Dean Bros., of Northumberland Heath, were summoned for selling one pound of butter which was 34 parts butter and 66 parts foreign fat. Defendants were fined 10s. and costs, and ordered to pay a similar sum for exposing margarine for sale without a proper label on it. These penalties seem very ridiculous for such an offence.

AT the Newmarket (Suffolk) Petty Sessions, on May 29th, James Blackwell, dairyman, Burwell, was summoned for selling adulterated milk at Newmarket St. Mary. Police-constable Offord gave evidence as to purchase, and Superintendent Reeve produced the report of Mr. James Napier, Ipswich county analyst, showing that there was 50 per cent. of poor milk, and 50 per cent. of skim milk. Defendant urged that the cows had been on poor pasture. He was fined £5, and 11s. 6d. costs.

BLACKPOOL VISITORS HAVE CAUSE TO THANK US.

THE medical officer of health for Blackpool (Dr. A. J. Anderson), in his annual report just issued, reports that of the samples taken twenty were of butter, fourlard, three coffee, three baking-powder, one egg-powder, one sugar, and one vinegar, and all were found to be genuine with the exception of four samples of butter. Dr. Anderson reports that by chance it was discovered that tradesmen in the borough were being supplied by a firm outside with a "mixture" called butter which contained upwards of 60 per cent. of foreign fat. This nefarious trade has been locally stopped.

PROSECUTIONS UNDER THE BREAD ACTS.

AT the West London Police-court on Saturday, June 2nd, before Mr. Curtis Bennett, John Beauchamp, of the Market, High-street, Acton, was summoned by Mr. Tyler, the Inspector of Weights and Measures for the county, for selling bread otherwise than by weight. Miss Coston, the assistant, appeared in answer to the summons. The loaf was proved to be 2oz. light in 2lb. A fine of 10s. and 2s. costs was imposed.—William Gee Harris, of Bollo Bridge-road, South Acton, was summoned for a similar offence. The loaf was proved to have been not quite 2oz. short in the 2lb. Mr. Harris told the magistrate that he was out when the purchase was made, otherwise the mistake would not have occurred. Fined 8s. and 2s. costs.

KESTEVEN MAGISTRATES MAKE A FARCE OF THE LAW.

FREQUENT as are the exhibitions of magisterial foolishness as regards the Food and Drugs Act, it is not often we come across so silly a decision as the following:—On June 1st, at the Kesteven Petty Sessions, before Major Tempest and Mr. C. C. Curtis, George Thompson, of Skellingthorpe, was summoned for selling adulterated milk at Bracebridge on May 8th.—P.-c. Williamson deposed to taking a sample of defendant's milk, from which, the analyst's certificate stated, 27 per cent. of fat had been abstracted.—Defendant attributed the poorness of the milk to a change in the cow's food, and on oath denied that he had abstracted any fat from the milk. The Bench gave defendant the benefit of the doubt and dismissed the case.

It is a pity that cases of this kind are not brought prominently before the notice of the House of Commons by questions to the Home Secretary, or the President of the Local Government Board, which body is concerned with enforcing the Acts, as the action of the magistrates is as illegal as it is ignorant and against the public well-being. There was not a shred of evidence called to dispute the accuracy of the public analyst's certificate, and, such being the case, the magistrates were by law bound to convict. There is little use in local authorities striving to suppress adulteration and protect the public from its evils, if magistrates are to be allowed to set the Acts at defiance in this manner. The recent action of Sir John Bridge, and decisions like the above, show that it is high time a strong warning was addressed to such magistrates, to the effect that they must administer the law sensibly, or be deprived of a commission, the responsibilities of which they apparently do not trouble to understand. In this case it would be well if the authority would apply to the higher court, and compel these magistrates to convict, and thus teach them a merited lesson.

A GRUESOME POISON BOTTLE.

C. H. LEE, of Jamaica Plain, has invented a bottle, made of blue glass, so that its contents may not be affected by the light, and moulded into the shape of a skull, with the cross-bones beneath, while the word "poison" is placed in raised letters on the forehead, and at the base of the skull a space is left for the red label to tell the nature of the drug contained in the bottle.

Mr. Lee is a jobber in boots and shoes, and had his attention turned to the invention of this bottle by an invalid who while groping in the dark for her medicine one night got hold of a solution of carbolic acid and drank it by mistake. The effect was frightful and almost fatal, and it set Mr. Lee to thinking of a means to prevent the repetition of such a thing. The result was the skull bottle. He says of it: "The only criticism offered by the drug trade is that it might frighten some sensitive persons. That is exactly what I want to do. It is better to be frightened than to be killed. The bottle is being used by several of the largest dealers in the trade, and I believe that eventually it will come into general use."

THE BOVRIL COMPANY PUNISH ANOTHER SLANDERER.

ON May 31st an action by Bovril, Limited, against a Mr. Bailey was heard before Mr. Justice Hawkins.

Mr. Lockwood, Q.C. (with him Mr. Duke), appeared for the plaintiffs, and said that they were manufacturers of a commodity that was known by the name of Bovril, and was sold very largely in licensed houses. It was, in fact, an extract of beef, and they complained that the defendant, upon several occasions, when found in possession of horses that were unfit for work, had said that he was going to convert them into bovril. He was prepared to find that that observation would provoke a laugh; but it was the peculiar hardship in this case that in that way the slander became repeated from mouth to mouth, until it became a matter of very serious consequence to the plaintiffs.

Mr. Chas. Wilson said that he was an Inspector in the service of the Royal Society for the Prevention of Cruelty to Animals,

stationed at Liverpool, and on September 12th. he was in Railway-street, Ormskirk, and saw there the defendant, who was a dealer in broken-down horses, which he bought for export. He was "travelling" a horse along the road, and it was unfit to travel by reason of something the matter with its feet. Witness spoke to him about it, and he said that he had just bought the horse, and was sending a man to the station with it. Witness said that it ought to have been "floated," that was carried in a cart that had its bottom near the roadway. Defendant said, "I can't afford to pay for a float for bovril horses." In answer to another officer, he said, "You would like to see me float bovril horses." On September 20th, at Warrington, witness spoke to the defendant, who said that he had sent a horse to Antwerp for bovril. On October 2nd he saw the defendant outside the police-court at Warrington, where he had been summoned for cruelty to animals. He said, "You can summon me as many times as you like, but you will not stop me from buying bovril horses."

To Mr. Justice Hawkins.—He had not made any inquiry as to whether there was any manufacture, real or artificial, of bovril from horses at Antwerp, but such an inquiry had been made.

There was other evidence that at Warrington, on September 20th, the defendant said that he had bought the horse; that he was not going to work it, but was going to send it away that bovril might be made of it. He did not say where he was sending it to.

Mr. John Lawson Johnson said that he was vice-chairman of the Bovril Company, and Lord Playfair was the chairman. It was the only Company of that name, and they manufactured meat extracts. They manufactured bovril in South America, and they did not manufacture it at Antwerp or at any other place upon the continent. The defendant was not authorised to purchase horses for them.

Is there any truth in the statement that horse-flesh is used by your Company?—There is not the faintest shadow of a foundation for it. The question involved in the action was a very vital one for the Company.

Mr. Justice Hawkins.—Had any steps been taken to trace where Bailey's horses went to?—They were taken to Antwerp, and those that were cast were used in the manufacture of sausages, and they were used in other ways for food. They had no connection whatever with the manufacture of bovril.

Mr. Lockwood.—Very considerable inquiry had been made as to the system that had been followed, but he was not at liberty to go into any special or particular results that had been arrived at so far as Bailey was concerned.

There was a verdict and judgment for the plaintiffs for £200.

Mr. Justice Hawkins said that he should not allow the costs of witnesses who had been brought up from the country, because the case might very well have been tried at Liverpool or Manchester.

CITRIC ACID can now be made in a manner similar to acetic. A Hanoverian botanist named Wehmer has discovered a microbe in the atmosphere, pure cultures of which will convert sugar into an acid identical with that of the lemon. This discovery is expected to revolutionise the citric acid industry and injure the lemon growers. Eleven parts of sugar by the new process, with very little effort, gives six parts of acid.

A SHAM ANALYST.—In Dumfries Police-court on May 29th, an elderly man named John M'Kay, who has also passed under the alias of George Munro, was sentenced to sixty days' imprisonment for fraud. Accused represented himself as a travelling analyst for Messrs. Bass and Co., brewers, Burton-on-Trent, employed for the detection of fraud in their ales. He obtained a week's lodgings with a widow in Dumfries, running up a bill to the amount of 16s. 6d., and tried to cash an I O U for 3s. 6d. with a spirit dealer in the town, stating that the cashier had failed to send on his expense money. At both places he left boxes wrapped in brown paper, which he stated contained samples of ale; but on these being opened by the police after he had decamped they were found to contain only straw and stones. He was apprehended in Carlisle. Similar charges are preferred against him from Moffat and Motherwell.

CONTRACTS FOR DISINFECTANTS.**IMPORTANT NOTICE!**

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(C. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON, E.

WHAT IS A WARRANTY?

AT Barnsley, on May 30th, James Upperdine, shopkeeper, Mapplewell, was charged with having sold sweet spirits of nitre adulterated with five per cent. of added water.—Mr. Bundy, inspector under the Food and Drugs Act, who prosecuted, said he had a letter from Mr. Rideal, who appeared for the defendant, saying that he relied on a written warranty of the purity of the article supplied to defendant. If he was able to prove such a warranty he should [withdraw, as he should have no authority to proceed. On Thursday, the 17th inst., he visited defendant's shop and purchased three ounces of sweet nitre, and divided the sample in the usual way. The public analyst reported that the sample showed a dilution of sweet spirits of nitre of the lowest specific gravity, .850, with five per cent. of water. The sample was almost destitute of the real nitreous ether, the element of value in the spirits, this being probably due to the adulteration with water, as this had a great tendency to effect the deterioration of sweet spirits of nitre by keeping.—Mr. Rideal said the defendant purchased the nitre from Messrs. Smith, Dixon, and Lodge, wholesale druggists, Leeds, on September 22nd, 1892, and on the bottle was a large label, "Warranted genuine." Defendant, on being served with the summons, went over to Messrs. Smith, Dixon, and Lodge—whose representative was in court—who tested some portion out of the bottle and found there had been no dilution, but he believed it had lost strength by evaporation.—Mr. Bundy submitted that a printed label was not a written warranty.—Mr. Harvey said a shopkeeper was not an analyst. He didn't see how they could do anything with the shopkeeper after a label of assurance like that.—Case dismissed.

THE Staffordshire county analyst in his quarterly report states that the small percentage of adulteration in the butter samples submitted was striking this quarter, showing that the Margarine Act is being more carefully complied with, or that greater wariness is observed by the vendors towards strange purchasers, who may be employed by inspectors.

THE quarterly report of Mr. J. K. Colwell, public analyst for Clerkenwell, presented to the Public Health Committee on Wednesday, shows a satisfactory state of things, because out of 107 samples analysed, only sixteen were complained of. The samples included:—Butter, 23; mustard, 8; coffee, 6; citric acid, 1; mixed sweets, 3; cod liver oil, 1; cocoa, 3; pepper, 6; sugar, 1; margarine, 5; chocolate powder, 1.

THE annual report on adulteration in Middlesex was presented at the meeting of the County Council on Thursday. The report shows that of 28 samples of baking-powder analysed 8 were adulterated, 20 out of 223 of butter, 2 out of 44 of lard, 1 out of 20 of mustard, 1 out of 8 of vinegar, 2 out of 3 of yeast, and 1 out of 12 of ground ginger were adulterated. All the samples of cheese (8), coffee (82), cornflour (2), ketchup (2), oatmeal (1), pepper (45), and chocolate (2), were unadulterated.

A HUNGARIAN chemist, Dr. Johann Antal, already favourably known for his researches in toxicology, has reported to the Hungarian Society of Physicians that he has discovered a new chemical compound, the nitrate of cobalt, which, he says, is a most efficacious antidote to poisoning by cyanide of potassium or prussic acid. He tried the antidote first on animals, and afterwards on forty living persons who had been accidentally poisoned with prussic acid. In not a single case did the antidote prove a failure.

UN SOUND PORK AT YORK.—At the York Police-court on May 28th, Henry George Kidd, butcher, Hallfield-road, was summoned for exposing unsound pork for sale. The Town Clerk prosecuted, and Mr. Child, of Leeds, defended. Mr. Child admitted the offence, and, addressing the Court in mitigation of punishment, said the defendant had carried on business as a butcher for twelve years, during which he had held an irreproachable character. The condition of the pork was due to atmospheric influences. The Lord Mayor (Ald. Clayton) said as that was the defendant's first offence he would be fined only 10s. for each of the nine pieces, £4 10s. in all, and costs.

MILK WHICH WOULD NOT BEAR ANALYSIS.—David Gibbard, of the Crown Dairy, 384, Rokeby-road, Brockley, was summoned before Mr. Marsham at Greenwich, on May 1st, by Thomas Borsberry, sanitary inspector, for wilfully damaging a jug containing a pint of milk, value 10d., belonging to him.—The case was a peculiar one. The inspector, through an assistant, bought a pint of milk from the defendant's boy, and on the defendant finding that it had been purchased for analysis, he begged Borsberry to let him change it, saying it was not good milk. On the inspector refusing, the defendant knocked the jug out of the assistant's hand and broke it.—The defendant said the boy, by mistake, served the wrong milk.—Mr. Marsham fined him £5 and 2s. 10d. costs and damage.

EXPOSING BAD HAMS FOR SALE.—At the Police-court, Bridgnorth, on May 28th, John Nicholls, grocer and provision dealer, Toll End, Tipton, was charged with exposing for sale three pieces of ham unfit for human food, on May 12th.—The evidence showed that defendant, who attends the Bridgnorth market, had exposed for sale suspicious looking ham, and on the inspector visiting defendant's stall he saw three pieces of ham which were black and almost putrid. The ham was seized and taken to a magistrate, who ordered it to be immediately destroyed.—The Magistrates said such cases would be heavily dealt with, as they had the health of the people to look after, and fined defendant £2 10s., including costs, or fourteen days' hard labour, adding that if he came before them again he would be fined £20 for each ham exposed.

APPOINTMENTS OF ANALYSTS.—Dr. Hunter, Edinburgh, who has been appointed district analyst for Banffshire, has been appointed to a similar position by the counties of Mid-Lothian, West Lothian, Clackmannan, Sutherland, and Caithness. Dr. Falconer King, Edinburgh, who is appointed analyst also for Elginshire is analyst also for Roxburgh, Peebles, Inverness, and Orkney. Dr. Aitken, chemist to the Highland Society, in addition to being analyst for Aberdeenshire, is analyst for the counties of East Lothian and Ross. Mr. G. Macdougald, public analyst, Dundee, has been appointed district analyst for Fife, Forfar, Perth, and Kincardine.

AT the West London Police-court on Saturday, June 2nd, before Mr. Curtis Bennett, William Preston, of 1, Stanley-terrace, Acton Vale, milk seller, was summoned by Mr. Walter Tyler, the inspector of weights and measures for the county, for having sold a pint of new milk which was adulterated with 5 per cent. of added water. Defendant pleaded guilty, and, in reply to the magistrate, said that as he had been informed his only protection was a warranty from the wholesale dealer, he would in the future see that he obtained one. Fined £1 and 12s. 6d. costs. Two previous convictions were referred to.—At the same court William Whatley, of 16, The Parade, Acton Vale, was summoned for selling a pint of new milk from which 10 per cent. of fat had been abstracted. Mr. Bennett said in view of the fact that Mr. Bevan, the public analyst (together with three other eminent analysts), had in a previous case stated it was possible to feed a cow in such a manner that the milk actually given from such a cow would appear in an ordinary way (where the cow had been properly fed) to have had some of its fat abstracted, he would not be justified in convicting the defendant. Mr. Tyler referred to the case of Harrison v. Richards, where it was held that where no evidence had been tendered against the analyst's certificate, the magistrate was bound to convict. After further argument the hearing of the case was adjourned for one month.

LEAD POISONING IN YORKSHIRE TOWNS.

IT is a bitter satire upon our boasted advances in sanitation that there should yet be found important industrial centres where so little regard is paid to the health of the inhabitants that lead pipes are still used for conveying water. The terrible character of lead poisoning, with the depression of spirits, emaciation, colic, and paralysis attending it has been so often and so forcibly brought into public prominence, that it must cause a feeling of grave surprise that there should be at this day places where those in authority appear to regard this kind of insanitary murder with indifference. Yet that such is the case is proved by an inquest held last week at Gildersome, and by the manner in which the Shipley Local Board, a few days later, have received a deputation that waited upon the Board to complain of lead poisoning by the water service at Moorhead. In the Gildersome case the water was supplied by the Morley Corporation, and the inquest held on the 25th ult. to disclosed the following facts:—

"About five months ago Sarah Ann Wheatley, aged nineteen, the wife of David Wheatley, miner, Gildersome, became seriously ill. The services of Dr. Hector, of Drighlington, and Dr. Brereton, of Gildersome, were called in, and the patient was treated by both of them for lead poisoning. Her condition did not improve, and she expired on Thursday morning. The medical gentlemen who attended her refused to certify the cause of death, and upon the case being reported to Mayor Taylor, the coroner, he directed a post-mortem examination, which took place yesterday morning. An inquest followed at the King's Arms Inn, Gildersome. Alderman Stockdale (the Mayor), Alderman Schofield (chairman of the Waterworks Committee), and Dr. Steele (medical officer) represented the Morley Corporation, and Mr. S. S. Houldsworth (chairman of the Gildersome Local Board), Mr. J. Wilby (waterworks manager), and Mr. J. Ellis (clerk to the Gildersome Local Board) also attended.—The husband of deceased said he had been married two years. They removed from Adwalton to Morley. His wife complained of pains in her head, and both Dr. Brereton and Dr. Hector told him she was suffering from lead poisoning. He also suffered a few days from the same complaint. They got the water from a pump, but they had previously used town's water. That part of the pipe in the house that could be seen was made of lead. They also continued to use the town's water for certain purposes, for cooking, etc.—By Dr. Steele: Dr. Hector told him they were not to use the town's water.—Dr. Hunter, who made the post-mortem examination, said the lungs showed evidence of recent bronchitis, the other organs being fairly healthy. In the mouth were found exceptionally well-marked blue lines in the upper and lower gums, which were generally found in lead-poisoning. An ailment of the urinary organs, coupled with the bronchitis, was the immediate cause of death, but from the blue lines he also considered that the woman had a sufficient quantity of lead in the system to accelerate the immediate cause of death. He had heard complaints about the water, and had seen samples of water produced by Dr. Brereton with lead in them.—Jos. Wilby, water manager and rate collector for the Gildersome Local Board, was next examined. He had not had any complaints from the Wheatleys, and did not know there was any lead poisoning in the row. The water supply for Gildersome was obtained from Morley. It had been so for about

two years, being previously obtained from Bradford. When the water was changed there was no difference made in the pipes. The service pipes were made of lead and iron, lead principally. Those pipes were put in by the landlords, and they could put in what sort they liked. Witness had heard from the doctor that people had had lead poisoning.—The Coroner: Did you do anything? No.—Do you mean to say that you, a responsible person, and manager of the waterworks, did nothing when you heard that people were being poisoned? Oh, I told the Board, and they wrote to the Morley Corporation.—When did you first hear that there was lead-poisoning?—Some months ago.—Witness also said he believed that the pipe at Halliday's pump, the one which the Wheatley's had used, was lead.—After Dr. Brereton had given evidence, an altercation between the coroner and Mr. Wilby took place. The latter wished to speak, but the coroner would not hear him. He therefore left the room, and as he was going the coroner said: 'Turn that man out.' The policeman, however, simply opened the door, and Mr. Wilby walked out.—The jury returned the following verdict: Death from disease of the kidneys and bronchitis, accelerated by blood poisoning."

The facts above given show a callous indifference to the public health and fills us with astonishment, but they seem to be regarded as matters of course by the persons in authority throughout the district. If it be otherwise we cannot understand that light and airy manner in which this serious question was dismissed by the Shipley Local Board. At their meeting on May 29th, a large deputation of ratepayers residing in the Moorhead district of Shipley waited upon the Board to complain of the action of the water supplied by the Board on lead.

Mr. W. H. Platt, who acted as spokesman, pointed out that the matter was a most serious one to the ratepayers and property-owners of Moorhead, where the lead poisoning seemed mainly to prevail. He stated that he held in his hand certificates from medical men showing that he and his wife and nurse were suffering from lead poisoning, that Mr. Emmott and his wife, Mr. Rigg and his wife, and many others were or had been suffering from the disease. Not only did they suffer in health, but their expenses were greatly enhanced by doctors' bills and in other ways. The members of the deputation considered that the Local Board had not taken the steps to remedy the evil that they might have done. From what the deputation had learned, it seemed that the Board had only taken action on the previous day, and it seemed to him that if they could take action the day before that deputation had come there, they might have taken action long ago.

The Chairman said that the Board had for some time been in consultation with the medical officer of the County Council, Dr. Whitelegge, who had made a great number of experiments for their benefit. The Board had not known what to do until those experiments were made. He had made a recommendation, which the Board were now trying to carry out, although Dr. Whitelegge had not yet completed his experiments. It had been the impression of the Board that it was due more to the old lead service pipes than to anything else that the soft water became impregnated with lead. The high-level water was really better treated and was better water than the low level, but, unfortunately, it had this acidity.

Mr. Platt: We admit that.

The Clerk pointed out that Professor Dewar had recently stated in Bradford that a sand filter was a sovereign remedy for acidity in water. The high level water at Shipley was passed through a sand filter, so it would appear that Professor Dewar's contention was not absolutely correct.

Another member of the deputation stated that absolutely pure water would act upon absolutely pure lead.

Mr. J. Bower, who rose to thank the Board for the kind way in which the deputation had been received, advised the Board to push on with the cemetery question as quickly as possible, for they were all in a fair way either for church or cemetery (laughter). He added: I must say you are the most lackadaisical lot of Board men I ever came across in my life.

Mr. Preston suggested that if the members of the deputation were suffering from lead poisoning it must be a nice sort of lead poisoning; they all looked very well on it.

The Chairman's remarks show that Shipley is at least some thirty years behind the times if the Board really did not know what to do to prevent this poisoning, and the alarming prevalence of lead poisoning throughout the district gives rise to grave doubts whether the Shipley Local Board is alone in this ignorant disregard of public health. Nearly every medical man in the district has cases coming regularly under his observation, and as the authorities appear so indifferent to the evil, the time has surely arrived for an inquiry by the Local Government Board and a clear official pronouncement upon the evil and how to prevent it. We suspect it will then be found that the ignorance is more assumed than real, that human lives are being sacrificed, and disease and misery are being inflicted upon the inhabitants solely on account of pounds, shillings, and pence. The tinkering nonsense of notoriety-seeking chemists is no safer a guide for acidity in water at Shipley than it was for preventing explosions at Waltham. There is an effective preventive of lead poisoning, and that is to do away with the lead pipes and replace them by tin-lined ones. Costly as the change would be, it would soon be recouped by less illness amongst the inhabitants, and if there be any common-sense and public spirit in the affected districts, this should be done forthwith.

BASLOW LOCAL BOARD AND ADULTERATION.

THE County Council wrote stating that Mr. Outram, the sanitary inspector of the County Council, had been appointed inspector under the Food and Drugs Act. The County Council had now appointed a public analyst, and more samples were to be analysed in the future than had been in the past. The question of co-operating in the matter was deferred for the next authority to deal with.

THE MARGARINE ACT.

AT Birmingham Police-court, on June 1st, Frederick Bolton appeared in answer to two summonses charging him under the Food and Drugs Act with selling butter containing 90 per cent. of foreign fat, on April 26th. Inspector Davies proved the purchase of the article from the manager of defendant's business, at 67A, Digbeth, and put in the certificates of the Medical Officer of Health. Defendant said he was ignorant of the trade himself, and his affairs had gone wrong. He had now placed them in the hands of a trustee. A fine of £1 and costs was imposed in the first case, the prosecution being withdrawn in the second.

TINCTURE OF IODINE.

AT Birmingham Police-court, on June 1st, Cornelius Bayley, chemist and druggist, 40, Bristol-street, was summoned for selling tincture of iodine which did not contain the component proportions prescribed by the British Pharmacopœia.—Mr. Porter (Messrs. Glaisyer and Porter) defended, and admitted that a technical offence had been committed, but it had arisen through the stupidity of one of the defendant's servants. He called defendant and an assistant, who stated that the tincture of iodine contained the drugs in the proportions prescribed, but the solution was incomplete when the article was sold, and the assistant neglected to shake the bottle.—A fine of £2 and costs was imposed.

THE ADULTERATION OF CANADIAN HONEY.

THE *Canadian Grocer*, in a recent issue, states:—In the adulteration of food, which is carried on so extensively by the unscrupulous, honey does not escape. In fact, few commodities are more tampered with than is this article. In some instances, in fact, to classify as honey some things that are put on the market as such, is a misnomer; they are merely substitutes for honey. The matter is now receiving the attention of the Dominion Parliament, a bill having been introduced to prohibit the "manufacture and sale of certain substitutes for honey." The first clause of the bill reads: "No imitation of honey, or 'sugar honey' so called, or other substitute for honey manufactured or produced from cane sugar or from any other substance other than those which bees gather from natural sources, shall be manufactured or produced or offered for sale in Canada, or sold therein; and every person who contravenes the provisions of this Act in any manner shall, on summary conviction, incur a penalty not exceeding £400 and not less than £100, and in default of payment shall be liable to imprisonment for a term not exceeding twelve months and not less than three months: Provided that this Act shall not be interpreted and construed to prevent the giving of sugar in any form to bees, or to be consumed by them as food." The bill seems to be a move in the right direction. When a person buys honey he should be no more given a substitute, whether it be injurious or no, than should he be given a stone who asks for bread. A man, if he so desires, should not be prohibited from making a substitute for honey as long as it is wholesome and the package containing it clearly states the nature of its contents. And this the proposed amendment to the Act respecting the Adulteration of Food, etc., does not propose to do. What it aims to do is to prevent substitutes being palmed off on the unsuspecting public as the pure article, and for this reason is entitled to all support.

TUBERCLE BACILLI IN HOUSE AND HOSPITAL WARD DUST.—The dry dust from a house in which there had been a series of cases of phthisis was examined by Dr. R. S. Miller. After giving the instructive history of the house in relation to cases of phthisis arising within it, he found numerous tubercle bacilli in the dust scraped off the top of the dining-room door and other places. The same topic in relation to hospital dust has been investigated by Drs. Heron and Chaplin, and their experiments tended to prove that the precautions adopted in the hospital in regard to the use of disinfecting spittoons, etc., were efficient means in preventing the accumulation of bacilli in places unexposed to the destroying power of sunlight. The experiments of Drs. Ransome and Delépine to test the value of the methods used by the municipality of Manchester for disinfecting rooms which had been occupied by tuberculous persons, seem to show that wall-paper infected with bacilli exposed to sunlight for forty-five days were non-infective, while similar paper dried in the dark, or exposed to the action of euehlorine in rooms that were being disinfected, were infective, and that the bacilli were therefore not destroyed by the action of this method of disinfection.

THE HANDWRITING ON THE WALL.

THE "Cordite gang" is becoming more and more covered with public contempt, and the end cannot now be far off.

Colonel M'Clistock, Superintendent of the Royal Gunpowder Factory at Waltham Abbey, has sent in his resignation to the War Office, and Captain Nathan is acting as Superintendent pending the appointment of Colonel M'Clistock's successor. Lord Sandhurst, Sir F. Abel, and Dr. Anderson, Director General of Ordnance Factories, have visited the factory and tested samples of different materials used in the manufacture of nitro-glycerine, similar to that which recently exploded.

With such magnificent public services to their credit as the explosions at Waltham, some hundreds of roastings alive yearly by an unsafe flash-point for oils, adopted in order to give American and Russian oils a monopoly in the United Kingdom and shut home-manufactured oils out of our markets, which game has, unfortunately, only succeeded too well, as is shown in the ruin of the Scotch oil trade; and with last, but not least, the impudent exploitation of our colonies and dependencies by the Imperial Institute, is surely time that English public life was purified by the exclusion of a gang of adventurers from possibilities of further injury, whether done under the guise of science or patriotic public work. What they have done with "Cordite" is, thanks to the *Pall Mall Gazette's* public spirit, pretty well known; but, judging from Mr. Asquith's statement last week in the House of Commons that there do not appear to be sufficient Members of Parliament interested in the question of the flash-point of oils to form a Committee of the House to enquire into the question, there appears to be a strong lack of public spirit amongst right honourable and honourable gentlemen. Every year our present flash-point is responsible for the deaths of many hundreds of persons burnt by lamp explosions, and the victims are mainly amongst the poor. Surely the roasting-alive of hundreds of their fellow-citizens yearly, accompanied by the ruin of an important home industry, ought to have more interest for English humanitarians than academic problems such as that of the dangers of opium. An inquiry would show how deeply home trade has been injured, how the Government has been "gulled," and how thousands of human beings have suffered agonising deaths by this pseudo-scientific flash-point. It should also have another result, by causing those responsible to be for ever "warned off" the course of public life, as the worst of enemies to the public weal.

THE SPREAD OF DIPHTHERIA.

THE alarming increase of diphtheria in London may well cause the question to be asked if we are taking all the necessary precautions to prevent the disease spreading. The New York Board of Health has announced a new measure looking to the control and diminution of diphtheria, and circulars have been sent to practising physicians giving the grounds for the step decided upon and the reasons why it was deemed expedient.

The proposition is to supplement the primary bacteriological examination now made at the beginning of any individual case of the disease, by other cultures repeated during its course and during convalescence. It is hoped in this way to make sure that apparent recovery, and the disappearance of all false membrane, is followed by the extermination of all the Loeffler bacilli from the throat. The circular is written by Dr. Hermann M. Biggs, chief inspector of pathology, bacteriology, and disinfection, and is signed by President Wilson with the approval of the Board. It is explained that four hundred and five cases of true diphtheria have been subjected to repeated examinations at intervals of three or four days during illness and until the disappearance of the bacilli. It was found that in one hundred and sixty cases the bacilli persisted after the complete separation of the false membrane, or, in other words, after the individual had recovered. Of these one hundred and sixty cases, one hundred and three showed the germ for seven days, thirty-four for twelve days, sixteen for fifteen days, four for three weeks, and three for five weeks, after the exudation had completely disappeared from the upper air passages. *The circular infers, thence, that "these results show that in a considerable proportion of cases persons who have had diphtheria continue to carry the germs of the disease in their throats for many days after all signs and symptoms of the disease have disappeared."*

These experiments have led the Health Department to adopt the rule that no person who has suffered from diphtheria shall be considered free from contagion until it has been shown by bacteriological examination, made after the disappearance of the membrane from the throat, that the throat secretions no longer contain the diphtheria bacilli, and that until such examinations have shown such absence, all cases in boarding-houses, hotels, and tenement-houses must remain isolated and under observation. Disinfection of the premises therefore will not be performed by the department until examination has shown the absence of the organisms.

AN EASY METHOD OF STERILISING WATER.

MORITZ TRAUBE recommends a solution of chloride of lime. He finds that a solution containing 0.000426 gramme, when added to 100 c.c. water containing bacteria in large amount, destroyed all in about two hours. The water was shown to be free from germs by means of suitable nutritive media, as Koch's bouillon. After two hours the chlorine was only diminished to the extent of 9 per cent. In order to remove the excess of chloride of lime, the addition of 0.0002 gramme sodium sulphite was sufficient. An excess of the latter substance is not of much consequence, inasmuch as it is converted into sodium sulphate after the lapse of a few hours. By the addition of these two compounds the hardness is only increased 0.7 degrees (German). One million cubic metres of water require 85 cwt. of chloride of lime and 40 cwt. of the sulphite.

It is interesting to note that the organic matter of the sterilised water was practically the same after the action of the chloride of lime. It seems, therefore, that the chlorine acts chiefly on the microbes. Traube made no experiments on pathogenic microbes, but from the researches of Koch and of Nissen (*Zeitschrift für Hygiene*, Vol. viii., p. 62) it is probable that they are also destroyed. The author recommends this method for employment on the large scale as being cheap, feasible, and reliable. (Moritz Traube, "*Zeitch. für Hyg.*" Vol. xvi., Part I, February, 1894.)

MICROBES AND DISEASE.

V. GALTIER finds that pathogenic microbes, such as *Bacillus anthracis*, *Streptococcus pneumoenteritis equi*, etc., when attenuated until no longer capable of causing death, may have their energy renewed and become virulent again when two separate species are introduced into the same organism together. Both may increase rapidly side by side, but usually one tends to disappear as its companion recovers its virulence. When two species are found associated, it depends upon the manner of their introduction into the organism affected and the species of the latter which one shall become more active. In the laboratory this tendency of associated species of bacteria may be utilised to restore to attenuated microbes their original virulence. Explanations may thus be afforded also of the revival of certain epidemics and of the aggravated effects produced in cases of vaccination by means of otherwise harmless virus, as the entry into the system of a microbe which confers immunity against a given disease may increase the tendency to infection by another (*Comp. rend.*, cxviii. 1001.)

TESTIMONIAL TO J. CARTER BELL, ESQ., F.I.C., F.C.S.

THE seventh meeting of the session of the Society of Chemical Industry, Manchester section, was held on Friday evening last in the rooms of the Chemical Club, Victoria Hotel, Manchester, under the presidency of Mr. Ivan Levinstein. Before entering upon the business of the section Mr. Levenstein, as president of the Manchester section of the Society of Chemical Industry and chairman of the Manchester Chemical Club, presented to Mr. J. Carter Bell a testimonial in recognition of his many services rendered in connection with the Society and Club, from the date of their formation to the present time. The testimonial consists of an English brass quarter chime clock on gongs and bells with handsome brass vases to match, also a pair of brass pedestal oil lamps. The clock bears the following inscription:—Presented to J. Carter Bell, Esq., A.R.S.M., F.I.C., by members of the Manchester section of the Society of Chemical Industry and of the Manchester Chemical Club. June 1st, 1894.

The meeting subsequently went into discussion upon a paper by Mr. W. Naylor, F.I.C., on the question of the disposal of sewage. Letters were read from Sir Henry Roscoe, M.P., and Mr. Scudder, whilst Mr. Carter Bell, Mr. Grimshaw, Mr. Tyrer, London, joined in the debate, and with Mr. Naylor's reply the present session of the section terminated.

CORRESPONDENCE.

GERMAN "IRISH WHISKEY."

To the Editor of FOOD AND SANITATION.

SIR,—The Chancellor of the Exchequer has replied to Mr. Field, saying that the most careful inquiry has failed to discover a single case of the conversion of German into so-called Irish whiskey. I hope Mr. Field will not be content with this, because I know as a fact that so-called whiskey is sent from Hamburg to Glasgow, shipped free on board at three shillings a dozen, and sent to India as "Scotch whiskey." A small label marked "Made in Germany," is attached, but this is removed after it has passed the Customs.

The "most careful inquiry" failed in this case also, but it was proved by the production of the circular of the Hamburg firm. Perhaps if Sir W. Harcourt would condescend to pursue the inquiries, instead of letting the inquiries pursue him, he might arrive at the truth. I have even seen a cask labelled "Sherry," marked "Made in Germany."

I am, Sir, your obedient servant,

CUSTOMS.

COLEMAN'S "WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

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Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

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A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps

Food and Sanitation.

SATURDAY, JUNE 16TH, 1894.

THE LATEST PRODUCTION OF MR. HERBERT GARDNER'S GENIUS.

In the intervals that our heaven-sent Minister of Agriculture can spare from amusing the House of Commons by childish spars with Mr. Henry Chaplin, he has been applying his mighty intellect to a Bill amending the Merchandise Marks Act. It is down for second reading on Monday next, and the following are its provisions:—

The Bill is brought in by Mr. Herbert Gardner, and backed by Sir John Hibbert and Mr. Burt.

"A Bill for enabling the Board of Agriculture to undertake prosecutions in certain cases under the Merchandise Marks Act, 1887.

Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. The powers exercisable by the Board of Trade under the Merchandise Marks Act, 1891, with respect to the prosecution of offences under the Merchandise Marks Act, 1887, may in cases which appear to the Board of Agriculture to relate to agricultural or horticultural produce be exercised by that Board, and in such cases the former Act shall apply as if the Board of Agriculture were referred to therein instead of the Board of Trade.

2. This Act shall not extend to Ireland.

3. This Act may be cited as the Merchandise Marks (Prosecutions) Act, 1894, and shall be read with the Merchandise Marks Acts, 1887 and 1891."

It would be hard to tell why this ridiculous measure should have caused such a flutter amongst traders, because it is absolutely useless. If it were meant to be of any value it would be a *compulsory* Act instead of an *optional* one. As it is, even if the House of Commons wastes its time in passing the measure, it is bound to share the fate of the original Act. It is everybody's business to enforce it, and it needs no great prescience to state that in consequence it will be never heard of. We have grown weary of this legislative humbugging of traders. The existing powers enjoyed by the Board of Trade to enforce that Merchandise Marks Act were not spontaneously used in one single instance last year, although that department swallows some £179,000 yearly of public money to look after the interests of British trade. There were altogether only some six prosecutions, and these were owing to persistent pressure by traders, and the whole facts were also placed before the useless department. If there were any money placed at the disposal of the Board of Agriculture, and officials appointed to enforce the Act, Mr. Gardner's effort might be taken seriously; such, however, not being the case, it

TRUE RECIPROCITY!

OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

"SILVER VEIL,"

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

Why support the product of a country which brags of the McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDEN'S FACTORIES, LIVERPOOL.

is only wasting public time and irritating traders who understand the question to draft and put forward ridiculous amendments, such as these by Mr. Gardner.

HULL AND ITS ANALYST.

HULL must number a goodly proportion of sore-headed numbskulls in its town council. Last week the members "fit, and fit, and fit" over the re-appointment of Mr. James Baynes to the post of borough analyst and demeaned themselves in a manner of which the following is a specimen:—

Alderman Fraser in moving the adoption of an excepted portion of the Sanitary Committee's minutes, referring to the appointment of Mr. Penney as a borough analyst, said that the appointment was a yearly one. It had been his duty for a number of years to move the re-appointment of Mr. Baynes, but about four years ago he went into the witness-box and gave evidence in opposition to the Corporation in a matter in which they were very much concerned. There had been a number of letters from Mr. Baynes, in which he said that the salary was paltry and ridiculous. There was, therefore, a degree of friction between Mr. Baynes and the committee, and as Mr. Baynes thought the salary of £100 was ruinous, the committee had no other course but to appoint a man who was willing to take that amount. Mr. Cohen seconded the adoption of the minutes. Alderman Rayment said the position was always regarded as a permanency, and it was required that the person holding it should be annually reappointed. The committee was not justified in going outside and putting Mr. Baynes on one side for no reason, and taking another gentleman in his place. He moved as an amendment, that Mr. Baynes be re-appointed. Alderman Sherburn seconded. He voted against Mr. Baynes, believing that he was not prepared to discharge the duties at the salary of £100 a year, but learning that if he failed to persuade the Committee to increase the salary he would be glad to accept the appointment on same terms, he had pleasure in seconding the amendment. Mr. Moulds said he received a letter from Mr. Baynes and a deputation with reference to the appointment. He never remembered, during the short time he had been connected with the Corporation, even for a labourer's job, such canvassing and touting as there had been for Mr. Baynes. Alderman Pool also strongly complained of the amount of canvassing and touting there had been, and supported the minutes. After further discussion, during which Alderman Larard commented upon the fact that Mr. Baynes had been the Corporation official for 17 years without any addition to his salary, Alderman Fraser, in reply, said he felt he was doing a justice to Mr. Baynes in relieving him from a position which was paltry, ridiculous, and ruinous. The amendment was declared carried, when a division was demanded, which resulted as follows:—For: Aldermen Larard, Leak, Rayment, Rollit, Sherburn, Toozes, and Wilde, Councillors Beilby, Calvard, Cooper, Crook, Feldman, Fillingham, Gruby, Jarman, McGaw, Massey, Morrill, Edward Robson, T. H. Richardson, Scott, Shaw, Townsend, Wharram, Wise, and the Mayor. (26). Against: Aldermen Fraser, Pool, and Seaton, Councillors Bell, Biggins, Cohen, Jackson, Millington, Moulds, Parrott, Ross, Skinner, and the ex-Mayor (Alderman Hall) (13). Messrs. Horton, Laverack, and Marshall did not vote. A resolution appointing Mr. Baynes the Borough Analyst was then adopted. The Council adjourned shortly before half-past six.

The only creditable thing about the wrangle is that the cabal to oust Mr. Baynes did not succeed. Putting aside the fact that in scientific attainments Mr. Baynes is immeasurably superior to the nominee of the soreheads, it would clearly have been the duty of the Local Government Board to refuse to sanction Mr. Penney's appointment had it been made, inasmuch as that gentleman is engaged in the sale of drugs, and is "thus debarred from acting as a public analyst under the Food and Drugs Act." It is just as well, therefore, that the appointment was not made and that the common-sense of the bulk of the Council saved the Sanitary Committee from making asses of themselves. They would be better serving the ratepayers if they had their purchases of carbolic regularly analysed.

SMETHWICK AND ADULTERATION.

ON June 7th, at a meeting of the Smethwick Traders' Association it was reported that the County Council had been asked to appoint a local inspector under the Food and Drugs Act and the Weights and Measures Act for the Smethwick district, and that the Council had the matter under consideration.

PROSECUTING OLDHAM CHEMISTS.

AT Oldham, on June 7th, eight chemists were summoned for selling a syrup containing a very small portion of poison, as well as fly-papers, without entering the transaction in a book, and to a person unknown. The prosecution was undertaken by the Patent Medicine Vendors' Association. Liverpool, whose representative said the proceedings, the first of their kind, were taken to show that as regards the sale of patent medicines qualified chemists were as bad as the unqualified men. The magistrates adjourned the cases for a week.

HOW MUCH MILK WAS LEFT ?

AT Greenwich, on June 5th, John Haslett, of 2, John Penn-street, Greenwich, was summoned by Inspector Borsbery, on behalf of the Greenwich District Board of Works, under the Sale of Food and Drugs Act.—Mr. Spencer said the defendant was summoned for selling as milk a pint of which 55 parts had been skimmed, 25 was added water, and 25 per cent. of cream had been abstracted.—Mr. Kennedy: Then what is left of it?—(Laughter.)—The defendant said his brother sold the milk as he received it, at 1½d. a pint as "separated milk."—The inspector said he was charged 2d., and that the halfpenny was returned after the declaration that the milk was required for analysis.—The defendant's brother said he was told he might keep the halfpenny.—He cried "Milk, oh," not "Skimmed milk, oh!"—Mr. Kennedy said it was a scandalous case of cheating, and fined the defendant 5s. and 2s. costs.

THE ARTIFICIAL COLOURING OF SUGAR.

MESSRS. LYLE AND SONS say :

"We do not intend for one moment to defend the sale of any sugars which are not made in Demerara as 'Demerara sugar,' although it is well-known that all crystallised raw sugar, wherever made, is publicly sold under that term.

"It is, however, in regard to the question of the artificial colouring of sugar that we desire to make some comment, and that the public analyst for Wiltshire apparently requires some enlightenment. The inference from a perusal of his report is that 'genuine Demerara' attains its complexion by some natural process, whereas all other yellow sugars are artificially coloured. This is notoriously not the case; all Demerara sugars are invariably artificially coloured.

"Demerara planters coloured their sugars by one of two well-known processes, namely, by adding either sulphuric acid (oil of vitriol), or chloride of tin, both of which are very poisonous substances.

"In opposition to the opinion of the analyst for Wiltshire a prominent instance is known. The analyst for a West-end vestry recently warned a large retail grocer against selling as real Demerara sugar which he (the analyst) certified to be dyed beet crystals, but which sugar was, as a matter of fact, the choicest brand of the largest makers of real raw Demerara sugar!"

THE MARGARINE ACT.

AT Liverpool on June 11, Ann Fletcher, provision dealer, Irvine-street, Seaforth, was summoned for having exposed for sale a piece of margarine not properly labelled. A police officer bought a pound of the margarine from the unlabelled portion, for which he paid 8d. It was analysed by Dr. Campbell Brown, whose certificate showed that the substance consisted of 10 per cent. of water and 60 per cent. of fats other than butter. The magistrates imposed a fine of 10s. and costs.

At Kensington Petty Sessions, Thomas Young, 220, Ladbroke-grove-road, was summoned at the instance of the vestry for selling an article, to wit, butter, containing 85 per cent. of foreign fat. The defendant said the article was sold under circumstances concerning which he had no knowledge or control. He was moving at the time the purchase was made.—Mr. Chambers Leete produced a letter from the defendant, stating that he did not sell butter on the premises.—The defendant called his sister, who said she had never been asked for margarine. She came from the country, and had been in the service of her brother since last Easter.—Arthur Ellenden, an inspector in the employ of the vestry, proved the purchase, and also swore that at a previous date when the defendant called him in to look at certain sanitary arrangements, he (witness) pointed out to him the fact that he was selling margarine without a proper label, and that he might have to pay him another visit.—Com.-Gen. Downs thought the defendant had convicted himself.—Fined 40s. for the first offence, and 20s. for not providing a proper label in conformity with the Act.

DILUTED WHISKEY.

ROBERT MEDCALF, innkeeper, Threshfield, who did not appear, was summoned at Skipton, for selling Scotch whiskey which, when analysed, was found to contain a proportion of added water.—Mr. A. Randerson, inspector under the Food and Drugs Act, prosecuted on behalf of the County Council. The Inspector, it appeared, called at the defendant's house on April 26th, and purchased a sample of Scotch whiskey, giving the defendant an intimation at the same time of the purpose for which he required it. The sample was submitted to Mr. Allen, County Analyst, on the following day, and on the 18th ult. the certificate of analysis was forwarded to the inspector. This stated that the sample had alcoholic strength of 39·3 deg. under proof, which corresponds to a mixture of—Whiskey of the minimum legal strength (25 deg. under proof), 81 parts; excess of water, 19 parts. The certificate added that no objectionable addition other than water was detected. The Inspector, replying to a question from the Bench, said the defendant had called at his office on the previous Monday, and asked if he would be kind enough to plead guilty for him, adding that he was sorry he had been caught. The Bench thought the mixture of water was a large one, and they imposed the penalty of 40s. and costs—£1 7s.

AN IMPUDENT YANKEE INFRINGEMENT OF LEA AND PERKINS SAUCE.

DEPUTY UNITED STATES MARSHAL J. D. GORE has completed the destruction of 8,000 bottles of bogus Worcestershire sauce, which has been stored at 114, Pine street, St. Louis, awaiting the final decree from Judge Thayer of the United States Court. The wholesale destruction is the result of a suit brought against the Western Distilling Company by Lea and Perrins, Worcester and New York, to enjoin them from manufacturing an imitation of the original Worcestershire sauce. On April 12th, Judge Thayer handed down his decision and ordered that all the spurious sauce manufactured by the Western Distilling Company be destroyed. Marshal Gore with four assistants began the execution of the order a few days ago. Lea and Perrins have also obtained temporary injunctions against Davis, Rosenburger and Levy and Charles H. Dorsey, of Galveston, Tex., and Carson and Foley, of Houston, Tex. In the decision of the court it was held that the defendants had used the firm name, signature and wrapper of the plaintiff, and that every vestige of the wrappers, bottles, stoppers, etc., should be destroyed. Mr. D. E. Bennett, a representative of Lea and Perrins, is in St. Louis and has given the matter his personal supervision.

WEIGHING PAPER WITH TEA.

IN the Justiciary Appeal Court, the other week, Jos. Bridger, 16, Clarendon-street, Glasgow, on behalf of the Home and Colonial Tea Stores, Limited, 7, St. George's-road, Glasgow, appealed against a conviction obtained against him in the Western District Police-court, Glasgow, of keeping for sale two packets of tea, each represented to be a quarter-pound weight, three and a half drams each short. It was proved that the appellant, in making up the packets in question, had weighed the paper with the tea. The questions of law submitted to the Court were:—Is a retail seller who keeps, made up for sale by weight, packets of tea represented to weigh a quarter of a pound imperial, guilty of a contravention of section 189 of the Glasgow Police Act, 1866, if the gross weight of the packet and its contents is a quarter of a pound, but the net weight of the tea is less by the weight of the paper? Was the magistrate (Baillie Murray) right in holding that in the circumstances the appellant had not discharged the onus laid upon him of proving that the deficiency in weight arose without any fraudulent intent?

Lord Adam said it was stated in this case that these packets were represented to weigh a quarter of a pound imperial. He could quite understand that in exposing such packets done up in the window they might have on the face of them the representation that they contained a quarter of a pound of tea, but on the one submitted to the Court there was no representation of any kind whatever. Nobody, looking at the packets of tea in the window, or in the shop, would be entitled to say that they represented a quarter of a pound of tea. If they went into a shop and saw a packet such as that before them, he should just as likely expect to get a quarter of a pound weight of tea and paper together, as to expect to get in the absence of any representation a complete quarter of a pound of tea, plus the paper. He would rather draw the conclusion that the tea and paper weighed a quarter of a pound in all. There was no representation, in his opinion, that the packet contained a quarter of a pound of tea. The representation, however, might be made in another way. A person going into the shop might ask for a quarter of a pound of tea, and be presented with this packet. But he was far from saying that was the state of the facts here. There was no proof that a representation of that sort was made in reference to this particular offence charged. He therefore moved that the Court sustain the appeal, on the ground that it was not proved that the two packets were represented to contain a quarter of a pound of tea each.

The Lord Justice-Clerk and Lord Wellwood concurred, and the conviction was quashed, with seven guineas of expenses.

ARSENIC IN MILK.

THIRTY PERSONS POISONED.

A TELEGRAM from Auxerre states that about 30 persons at Toney have been poisoned. A milkman, whose milk had several times turned sour lately in consequence of the stormy weather, was advised by his sister to put bicarbonate of soda in the cans. She gave him some packets, the contents of which were duly emptied into the cans and dissolved in the milk. Shortly afterwards his customers were attacked by violent pains, and it was discovered that, instead of bicarbonate of soda, the woman had, by mistake, given her brother packets of arsenic, which her husband used as a medicine for cattle. Some of the man's customers are still very ill, but others have nearly recovered.

SUCCESSFUL PROSECUTION OF A WHOLESALE DEALER.

GEORGE WARRINGTON, a provision dealer, purchased 14lb. of "Dutch," and 14lb. of "fresh" butter. He sold some of it, and the inspector under the Food and Drugs Act for the Vestry of St. George's, Hanover-square, purchased half a pound for 7d. He was summoned and fined, for selling butter adulterated with 10 per cent. of foreign fat, £5 and £1 5s. costs. At Westminster County Court on June 11th he claimed from Mr. Gascoigne the return of the £6 5s., three guineas for solicitor's costs, and three guineas for damage and loss of business. Plaintiff purchased the butter from a traveller to Mr. Gascoigne, who purchased it as butter from Mr. James Harris, wholesale dealer, of West Smithfield, E. C., who was third party in the action. His Honour found for the plaintiff with costs, and dismissed the third party without costs.

HOME-MADE BEEF, AND HOW TO PREPARE IT.

DR. WILLIAM R. HUGGARD (Davos Platz, Switzerland) writes: Most, if not all, of the beef powders in the market smell and taste of the chemist's shop, and are not readily taken by an invalid whose palate requires to be coaxed. A happy idea struck me several months ago that beef powder might without difficulty be prepared fresh and on a small scale by any ordinary cook. The experiment was made, and the result was satisfactory beyond expectation. Beef powder made at home is appetising, has a delicate aroma and flavour, and can be taken with pleasure by invalids who turn with aversion from ordinary food. If a little pepsin be taken at the same time, it is digested even when the ordinary peptonised foods are not retained. The mode of preparation is simple. Lean beef is cut into small pieces; these are put into boiling fat, dripping or butter, for a couple of minutes until the surface is browned. They are then removed from the fat and placed on a strainer for a few moments. Afterwards they are placed in a mincing-machine. The resulting mince is placed in a slow oven and dried. The drying process may take from five to 24 hours, or even longer, according to the heat employed. When thoroughly dried, the meat is quite crisp, and can be ground in a coffee-mill that has not been used for any other purpose. In the drying process the meat loses a trifle more than four-fifths of its weight. This beef powder can be taken in various ways; with hot water or soup, with mashed potatoes, with bread and butter in a sandwich, or with a little pepsin in a starch wafer. I have given this home-made beef powder with such excellent effect in several cases where there was much difficulty with food that I think my professional brethren may also find it useful.

HOUSE OF COMMONS COMMITTEE ON ADULTERATION.

IN the House of Commons, on June 7th, on the motion of Mr. Thomas Ellis, the Committee upon Food Products Adulteration was nominated as follows:—Colonel Bagot, Mr. Bolitho, Sir C. Cameron, Mr. Channing, Mr. Colman, Mr. Colston, Mr. Frye, Mr. Gardner, Mr. M. Healy, Mr. Jeffreys, Mr. Kearley, Mr. Lambert, Mr. H. Plunkett, Sir H. Roscoe, Sir M. Stewart, Colonel Waide, and Mr. Yerburgh.

TRICKING AN IRISH CREAMERY.

At Piltown Petty Sessions on June 7th, James Holden, Ballygaule, was fined £2 and costs for selling at the Miltown creamery milk from which 33 per cent. of cream had been abstracted. On similar charges Walter Walsh and Patk. Kenny were fined each £1 and costs. A charge against Mary Dollard for selling milk from which 44 per cent. of cream had been abstracted, was adjourned.

THE HAWKINS AND LAWRENCE FOLLY REACHES NEW ZEALAND.

The New Zealand Daily Herald, April 20th, says:— "At the Police-court, Invercargill, the hearing of the charges of adulteration was resumed. In the case of Wardell, charged with selling adulterated cream of tartar, a decision of Mr. Justice Hawkins was produced, ruling that cream of tartar (we suppose the decision referred to was baking powder) was not an article of food, and the case was dismissed. A rehearing was granted in the case in which Larking, a South Dunedin grocer, had been fined, and the information was amended by substituting 'drug' for 'article of food.' John Wardell and Mercer Brothers were then fined 40s. and costs for selling adulterated white pepper. Evidence was given by Wardell that he had received a guarantee as to the purity of the article."

THE LIQUOR CARNIS COMPANY, LTD.

APPLICATION was made, on June 8th, to Mr. Justice Stirling on behalf of Mr. Unthoff, who is the holder of ten first mortgage debentures in this Company, for the appointment of a receiver and manager. The Company was formed with a capital of £50,000, for the purpose of purchasing certain patent rights in connection with extract of meat, but during the four years of its existence it had lost over £4,000, and now default had been made in payment of interest. The principal assets of the Company were the patent rights, which were said not to be of much value, and the goodwill, which was supposed to be of value, as over £4,000 had been spent in advertising this particular preparation of meat. Mr. Hamilton appeared for the plaintiff, and Mr. Romer for the Company. The application was not opposed, and his Lordship made the order as asked.

DIGESTION WITHOUT FERMENT.

IN a paper read before the Paris Academy of Sciences, A. Dastre points out that the essential phenomenon of digestion consists in the chemical transformation of albuminoids, starchy matters, and sugars, into peptones and glucoses, under the influence of pepsin, trypsin, the amylolytic ferment, and invertin; and that the effects of these digestive ferments can be reproduced in the laboratory at will. In the course of some experiments on fresh fibrin and casein, however, he found that those substances had undergone the process of digestion, although any soluble ferments present had been totally destroyed by the preliminary boiling of the contents of the vessels. Subsequently, he arrived at the conclusion that fresh albuminoid substances may undergo the same changes as under the influence of the gastric juice, without the addition of digestive ferments, if they be kept in contact with antiseptic saline solutions—such as sodium chloride (10-15 per cent.), sodium fluoride (1-2 per cent.), or ammonium chloride (10-15 per cent.)—for a sufficient length of time. In the experiments, the fresh fibrin was first washed with antiseptic solutions and water successively, to neutralise the effect of any ferment present in the tissue, and then totally immersed in an antiseptic saline solution for some days or weeks. The action was most rapid and complete at a temperature of 40deg. and under a bright light. The fragments of fibrin gradually disappeared in the liquid, two globulins, coagulable at 54deg. and 75deg. respectively, together with propeptones and peptones, being formed. The two globulins are alleged to be identical with those produced by the action of the gastric juice on fibrin, which coagulate at the same temperatures and then similarly furnish propeptones and true peptones (*Comp. rend.*, cxviii., 95f).

HORLICK'S
MALTED
For Infants
and Invalids.
MILK
CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
SAMPLES FREE. 39, SNOW HILL, E.C.

CHEAP CONFECTIONERY REVELATIONS.

At Glasgow Sheriff Summary Court on May 30th—before Sheriff Birnie—Downie Brothers, confectioners, 46, Candleriggs, were charged with having, on February 7th, sold twelve chocolate cigars which were certified by Mr. R. R. Tatlock to contain 4 per cent. of paraffin wax, which is extraneous to chocolate cigars. Mr. John Lindsay, assistant clerk of police, prosecuted; and Dr. Colquhoun, writer, appeared for the respondents, who pleaded not guilty. Sanitary Inspector Murray stated that he paid threepence for the twelve cigars. Chocolate cigars which he bought in other two shops were genuine. Paraffin wax was sold at 1½d. to 2½d. per lb., beeswax at 2s. to 2s. 6d. per lb., raw ox fat at 3d. to 3½d. per lb., rendered ox fat at 4d. to 4½d. per lb., and cocoa butter at 1s. 2d. to 1s. 4d. per lb.—By Dr. Colquhoun: He had been a sanitary inspector for twenty years, and this was the first time he had had confections analysed. Sanitary Inspector Inglis corroborated. Peter Fyfe, sanitary inspector for the city, stated that, in consequence of complaints, he instructed eighteen samples of chocolate cigars to be taken. These were analysed, and thirteen were certified to contain paraffin wax and five were genuine. Paraffin wax was indigestible.—By Dr. Colquhoun: About three years ago a local confectioner was convicted of selling chewing gum which contained 43 per cent. of paraffin wax. He had heard from a doctor of two persons having been sick after eating chocolate. He did not know what kind of chocolate it was. No case of injury to the human frame through eating paraffin wax had come under his notice.

Mr. Tatlock, one of the city analysts, stated that paraffin wax was extracted from petroleum by treatment with vitriol and caustic soda, and from distilled shale by the same process. Paraffin wax was insoluble, and if it accumulated in the human body it must prove an irritant. At 98 degrees Fahr., the normal temperature of the human body, paraffin wax was a plastic mass like clay, but the latter would break into a fine powder, while the wax would not disintegrate. It was adhesive, and much more inactive than clay. The confection known as rock was not coated with paraffin wax. He saw no justification for using paraffin wax round chocolate cigars. If a wax were needed, beeswax should be used.—By Dr. Colquhoun: Paraffin wax would have no effect upon the human system if it passed through the body. It would depend on how it was chewed whether or not the wax would accumulate in the body. The melting point of paraffin wax was 122 degrees, and that of beeswax 142 to 145 degrees. By the Sheriff—Chocolate was generally made of cocoa, sugar, and flavouring materials.—By Mr. Lindsay: There would be no great objection to 4 per cent. of beeswax, seeing that a honeycomb contained 3 per cent.—Dr. Clark, another of the city analysts, corroborated, and condemned the use of paraffin wax in confections.—Alexander T. Assafrey, confectioner, Glasgow, stated that chocolate was composed of the pure cocoa nib ground to an oily substance and then mixed with sugar. When the roasted kernel was ground, two products were the result—cocoa butter and cocoa powder. Cocoa butter was worth 1s. 2½d. per lb. at present, buying it by the ton. In cheaper forms of chocolate ox fat was added instead of cocoa butter. Paraffin wax was put in to assist the animal fat to dry properly and to give the sweetmeat an appearance resembling that of the genuine article. By extracting the cocoa butter and substituting the cheaper fat the cocoa was reduced in value. The cocoa butter was an essential element in cocoa. In his opinion the paraffin wax was put in for cheapness and to solidify the greasy article.

By Dr. Colquhoun: He did not deal in cheap confections. He made and sold chocolate cigars and chocolate cream cigars. Those before the Court were what were known in the trade as chocolate cream cigars. When the cocoa bean was ground to a liquid mass and sugar was added the sugar absorbed the moisture. That was chocolate pure and simple, but it would not liquefy again, and for covering bon-bons, etc., the chocolate was made liquid by the addition of cocoa butter.—Alexander Manson, confectioner, Glasgow, said that he had never used paraffin wax in chocolate making, but understood that it was used to harden the cigars.—By Dr. Colquhoun: About a year ago he tried paraffin wax in the making of caramels, about a half per cent., but being told that it was indigestible he at once gave it up. He used it to prevent the knife clagging.—By the Sheriff: Chocolate rolls had been sold for many years, one kind containing cocoa flour, cocoa butter, sugar, and flavouring materials, and another containing cocoa flour, ox fat, sugar, and flavouring.—The Sheriff asked what right they had to say that the one was a chocolate roll and the other was not.—Mr. Manson could give no answer.—James Robbie, wholesale confectioner, 38, Stockwell-street, also gave evidence.—For the defence.—Peter Nimmo, manufacturing confectioner, 147, Paisley-road West, said that chocolate cream cigars were very largely sold in the trade. The ingredients were chocolate butter, fat (if wished), and paraffin wax. As long as he could remember paraffin wax had been largely used in the confectionery trade. It was used for dissolving the chocolate, and by using wax less chocolate was required to cover the sugar. It also kept better. He had paid as much as 9d. per lb. for paraffin wax; it was not for cheapness it was used.—By Mr. Lindsay: He paid 4½d. per lb. for paraffin wax just now. He occasionally used paraffin wax for firming the chocolate and giving it a nicer appearance.—By Dr. Colquhoun: The use of paraffin wax allowed less chocolate to be used, and that made cigars cheaper.

Dr. John Dougall, Professor of Materia Medica in St. Mungo's College, said that paraffin wax was insoluble. Four per cent. of

it used in the manufacture of any confection would have no bad effect on the human system. He once gave a hypnotic patient a candle, and he ate nearly the whole of it, believing it was rock, and was none the worse.—By Mr. Lindsay: A child of seven years might eat a pennyworth—that was, four of these cigars—daily for three or four consecutive days without injury. By the Sheriff: Oranges, when the pulp was swallowed, were indigestible, also half-masticated apples, and the skins of gooseberries, raisins, grapes, and fruits generally, also almonds and nuts. Duncan Downie, one of the respondents, said that he had been using paraffin wax in the making of these cigars for 12 or 13 years, and had never had a complaint of illness. The wax was used to make the chocolate dry quickly and also to prevent damp.—Sheriff Birnie gave judgment on June 8th, and said that the prosecutor (Mr. Peter Fyfe, sanitary inspector for the city), purchased from the respondents certain chocolate cigars, four for a penny, which, on analysis, had been found to contain not only chocolate and sugar but paraffin wax. The prosecutor said that those were not of the nature, substance, and quality demanded, and that the respondent had incurred a penalty. Chocolate consisted of ground cocoa beans and sugar, and had the prosecutor asked for chocolate and got paraffin wax the respondents would have been within the Act. But chocolate cigars, or, as they were frequently called, chocolate sugar cigars could not be made solely from chocolate and sugar. They required in addition some glutinous substance to keep the cigars in shape, and while in the dearer cigars cocoa butter, that was an oily substance also obtained from the cocoa bean, was used, in the cheaper ox fat, mutton fat, beeswax, and paraffin wax were used, and both kinds of cigars had been in the market for years under the name of chocolate cigars or chocolate cream cigars. When, therefore, the prosecutor asked for chocolate cigars and paid the price of the cheaper cigars it seemed to the Sheriff impossible to say he did not receive what he demanded. Evidence was led to show that paraffin wax was injurious to health, and it might be well that parents knew it was not a food, but a mineral extracted from shale, but with injury to health he could not deal under the 6th section of the Act under which the prosecution was laid. He, therefore, dismissed the case, but allowed no expenses. Mr. Fyfe said that he would consult his committee about the other cases. The Sheriff said he thought they had better hold that the other cases would either not go on or be continued.

IMPORTANT MILK CASE IN GLASGOW.

SHERIFF BIRNIE gave judgment on June 7th in a case in which a milk dealer in the city was charged with selling to a sanitary inspector a pennyworth of sweet milk which was deficient in 15 per cent. of its natural fat. The defence was that the milk was sold as it came from the cow. The Sheriff said:—On a review of the four analyses produced and the evidences as to milk given by different cows, I am not able to say that what was sold in this case was not of the nature, substance, and quality of sweet milk. I only desire to make one further remark. Evidence was led to show that the milk of an individual cow, instead of being 2·75—as required by the Somerset House standard, or 3·350, and 4, which the tables show are by no means uncommon—has been known to fall as low as 1·98, and, in one case spoken to by Dr. Stevenson Macadam, 1·50. The remark I wish to make on that is this, that whether I am entitled to accept the Somerset House standard or not, in my view a seller in an ordinary dairy in this city will not be protected by showing that the milk supplied was equal to that of the poorest cow unless he also showed that it was actually the milk of an individual cow. That is not what I think is meant by sweet milk in this city.

CO-OPERATIVE STORES AND THE "SPENT GINGER" SWINDLE.

At South Shields Petty Sessions, on June 5th, James Brown, manager for the Boldon Colliery Co-operative Stores, was summoned for selling adulterated ginger. Mr. Iliff appeared for the prosecution, and Mr. Stanford defended. William Wilson, assistant inspector under the Food and Drugs Act, said that he purchased six ounces of ground ginger at the stores mentioned, for which he paid 4½d., and he handed the samples to Mr. Laidlaw. The latter stated that he forwarded the samples to the public analyst, and put in that official's report to the effect that the composition contained 70 per cent. of spent ginger, and was not genuine ginger.—Mr. Stanford, for the defence, put in guarantees from the supplying or wholesale company, and the manufacturers of the ginger, to the effect that the ginger was free from exhausted ginger, and of pure quality.—Upon the ground of these guarantees, the magistrates dismissed the case.

This is another instance of the "warranty" dodge. The price charged for the "Spent" article is one at which it would be impossible to buy genuine ginger and of itself should suggest adulteration, yet under the "warranty" the vendors escape punishment.

DRONFIELD LOCAL BOARD AND THE FOOD AND DRUGS ACT.

A LETTER was read from the County Council announcing the appointment of a public analyst and inspector to carry out the "Adulteration of Food and Drugs Act," and asking for the co-operation of the board. Agreed to. It was arranged to have the drinking water analysed periodically.

ACTION AGAINST AN ANALYST.

ON June 8th, before Mr. Justice Wills and a special jury, the case of *Johnston v. Smith* was heard. This was an action brought by a dairyman and provision dealer at Woolwich against the public analyst for the district of the Woolwich Local Board to recover damages for negligently certifying that the plaintiff's milk had been adulterated, thereby causing the plaintiff to be prosecuted. Mr. Bonsey, in opening the plaintiff's case, said the inspector purchased a sample of milk from the plaintiff for the purpose of analysis. The defendant analysed it and certified 20 per cent. of added water. The plaintiff was summoned and the correctness of the analysis was disputed. The case was adjourned for another portion of the sample to be analysed at Somerset House. The second analysis showed no added water, and the summons was dismissed. The plaintiff contended that the defendant had cast upon him a responsible and important duty. The defendant was bound to know that where an inspector sent him food for analysis, and he certified that it was adulterated, the inspector would take proceedings under the Sale of Food and Drugs Act. His duty, therefore, was to take care he did not injure any one by negligently giving a certificate. Mr. John Carty, the inspector appointed by the Woolwich Board of Health, said, in December, 1892, he called at the plaintiff's shop and purchased one pint of milk. He divided it into three 6oz. bottles, and sealed and numbered them all 682. He left one with plaintiff, one he kept, and one he sent to defendant at King's College. That was done in the presence of the plaintiff. The defendant certified that there was 20 per cent. of added water. Upon the receipt of that a summons was taken out under the direction of the local board. When the summons was heard the defendant's certificate was put in evidence. The magistrate suggested that the case should be adjourned and the milk analysed by the Somerset House authorities. He went and got the third portion of the sample and handed it to the magistrate. The certificate from Somerset House was sent to the magistrate. The certificate said the sample was marked 682 and there was no added water. The summons was dismissed. Mr. Bonsey proposed to read what appeared in the local paper. Mr. Justice Wills held that the defendant could not be held responsible for what appeared in the local paper, and rejected the evidence.—Cross-examined: He had not been dismissed. He was relieved of the duty of inspector of food. The defendant had complained of the way he dealt with the samples. His son copied from his note-book the wrong number of a sample, but the label was perfectly correct. He had sent in samples with the numbers of samples sent in before. He took four samples of milk from four people on the same day. In the case of two the defendant's analysis corresponded with the certificate from Somerset House. He wrote the labels in his office. He had 12 labels with him on that day. His sight was weak. While he was inspector he had to write the labels. On December 12, 1892, there was another man summoned for adulterated milk.—Re-examined: Four samples were bought on the same day. Two were certified as genuine. The two genuine were 681 and 683. In the case of 680 the magistrate did not direct a sample to be sent to Somerset House. The defendant had not complained about him before the plaintiff was summoned. He always affixed the labels in the presence of the vendor. Further cross-examined: On September 4, 1891, he put 551 instead of 557, on a label by mistake.

Mr. Alfred de Hailes, examined, said on January 9th, 1892, he had a sample of milk, No. 682, sent to him by the plaintiff. There was about 3 per cent of added water.—Cross-examined: The defendant was a very eminent person in his position. If one person found no added water and another 20 per cent. they must have been analysing different samples.—Dr. Banister, analyst at Somerset House, said he received a sample of milk on January 14th. He analysed it in company with Dr. Bell and Mr. Cameron. The certificate produced was the one they made. Cross-examined: He could not account for the difference between their certificate and the defendant's except that they were analysing different samples of milk. The plaintiff, called, said the inspector put the

milk in three bottles and put on the labels, all numbered 682, in his presence. He sealed the bottles and left one. His profits fell off £3 to £4 a week after the summons. The plaintiff's wife corroborated the plaintiff as to the numbering of the bottles. Dr. Banister, recalled, said he analysed sample 680 as well as 682; 680 contained 5 per cent. of added water. At the close of the plaintiff's case, Mr. Channell submitted that no action would lie against the defendant for the negligent performance of his public duties. Mr. Justice Wills: With regard to that I shall require the law to be elaborately argued, but the case must be first left to the jury upon the question of negligence. Dr. W. R. Smith, the defendant, was called, and said he was director of the laboratories of State medicine and professor of forensic medicine at King's College, London. He examined the milk. He estimated the total solids and the fat. To get the total solids a small quantity of milk was put into a small dish and weighed. The milk was then evaporated and weighed again, after all the moisture had evaporated. That gave the total solids. Where there was a suspicion of adulteration the invariable rule was to repeat the analysis. In this case his second analysis agreed with the first. The result of the analysis showed 20 per cent. of water. He had had to complain of the way Mr. Carty placed his samples before him.—Cross-examined: He asked Mr. Carty to frequently send him samples of milk in order to carry out the provisions of the Act.—Mr. Huntley, examined, said he was senior demonstrator in the laboratory, King's College. He assisted Dr. Smith in making the analysis. It was not possible for a mistake of 20 per cent. to occur.—Mr. Justice Wills, in summing up, said: The only question was, Was it proved to their satisfaction that Dr. Smith had been guilty of negligence? It was for the plaintiff to make that out. Somehow or other a mistake had been made. The samples had either got mixed up or there must have been an extraordinary and extravagant blunder in the making of the analysis. The case for the plaintiff depended upon whether they could rely upon the proper sampling of the bottles by Mr. Carty. He would ask them to find upon the issue of negligence before he addressed them upon the question of damages. The jury found a verdict for the defendant. Judgment accordingly. Mr. Bonsey appeared for the plaintiff; Mr. Channell, Q.C., Mr. Forman, and Mr. F. O. Robinson for the defendant.

THE PERCENTAGE OF WATER IN IRISH BUTTER.

At Ennistymon Petty Sessions, on May 23rd, acting Sergeant Tuohy, inspector under the Food and Drugs Act, summoned Bridget Devitt for selling butter adulterated with 17.46 per cent of water. Mr. Huggins, D.I., said the practice heretofore was to impose only the costs of the court, in addition to the fine, and it was not fair to have the county paying, through the Grand Jury, the additional expenses, which amounted to 2s. 6d. in each case of this kind. The Bench agreed with this view. Defendant was fined 1s. and 3s. 6d. costs.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

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(G. T. KINGZETT, F.I.C., F.C.S., Managing Director)

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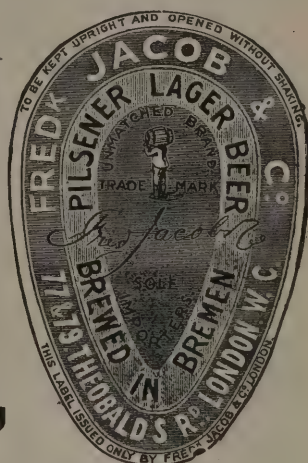
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WYETH'S BEEF JUICE,

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JOHN WYETH AND BROTHER,

Pharmaceutical Chemists,

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A liquid preparation of the choicest Beef, containing the nutritive albuminous principles in an unaltered and soluble form. It is produced under the careful manipulation of skilled operative chemists, supervised and directed by the highest commercial integrity. The experience of the Medical Profession and the analyses of the most searching character by Eminent Chemists, prove that

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contains all the albuminous principles of Beef in an active and soluble form; that it contains the hæmoglobin of meat unaltered; and that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession. POINTS OF SUPERIORITY OF

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It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.

How **WYETH'S BEEF JUICE** is to be taken:

Wyeth's Beef Juice should always be taken in Cold, never in Boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour, and activity to overworked and exhausted brain and body.

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Addressed to **WILLIAM F. HORTON**, Resident Representative of **JOHN WYETH and BRO.**

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THIS is the purest Liquorice Juice obtainable. It is a guaranteed specific—in fact, **Nature's Own Remedy** for Winter Coughs, Colds, and all Chest Affections.

Avoid patent medicines; they often contain dangerous drugs; and try this safe and effective remedy, provided by kindly Nature.

"By far the best and purest."—*Health.*

"The most esteemed of all."—*The Chemist and Druggist.*

The public are warned against cheap, adulterated brands—insist on **SOLAZZI.**

OF ALL CHEMISTS, CONFECTIONERS, STORES, &c.

GOLDFINCH (Brand) HOLLANDS GIN,

DISTILLED BY **HERMAN JANSEN, SCHIEDAM, HOLLAND,**

The Largest Geneva Distiller in the world. From own Maltings of Finest Selected Grain.

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TYPHOID FEVER AND BAD AIR.

WE have for many years past now been in the habit of regarding sewer gas as a sort of scapegoat, conveniently responsible for all manner of mischief, the origin and source of which we have been unable to trace. That this attitude was a wise one has been amply proved by the great advance in sanitation which has taken place during the past ten years or so, and the splendid results which have followed the determined crusade in this country against bad drainage and unsanitary appliances. But although thirty years or more have elapsed since the whole question of the relation of sewer gas to the generation and propagation of typhoid fever was eagerly discussed, first in this country and then on the continent, very little progress has been made in ascertaining the real connection between the exhalations from drains, etc., and the distribution of disease. In fact, some recent investigations have exhibited an uncomfortable tendency to whitewash the character of sewer air, and we are told that it is no worse than the air outside, that it contains in many instances fewer microbes, and that those it does contain are perfectly harmless. Bacteriology in this particular instance, however, while unable to terrify us, has certainly not succeeded in reassuring us, and however sparse the microbial population of sewer air may be, we shall not tolerate it either in our houses or surroundings.

EXPERIMENTS WITH ANIMALS.

In view, however, of some recent reports which have been issued on sewer air, the important and original investigations of Dr. Alessi which have lately appeared in an Italian scientific journal on the relation between sewer gas and typhoid fever deserve more than a passing notice. So far as we are aware they are the only experiments which have been made endeavouring to trace the direct connection between the inhalation of sewer air and the action of the typhoid bacillus on the animal system. For this purpose boxes with a perforated bottom were fixed over an aperture communicating directly with a drain, and in these boxes various animals—rats, rabbits, or guinea-pigs—were placed, and were thus compelled to live in an atmosphere of sewer gas. In order, however, to ascertain whether this atmosphere had any relation to typhoid infection, these animals were also inoculated with a small quantity of an almost harmless or weakened growth of the typhoid bacillus. Meanwhile, other animals, also shut up in boxes, were treated in the same manner with similar typhoid bacilli, but were not submitted to the exhalation from drains, being kept in ordinary surroundings. These animals were kept in order to compare the different results obtained in the two series of experiments, and directly trace the specific action, if any, due to the inhalation of these noxious vapours.

THE EFFECTS OF SEWER GAS.

The rats, which were the first animals employed, soon began to lose their vivacity under the influence of sewer air, they also grew thin, although their appetite did not decrease, for they ate voraciously. No less than thirty-seven out of the forty-nine rats treated with typhoid germs and living in an atmosphere of sewer air died, and they all exhibited the symptoms typical of typhoid infection. Very different were the results obtained with the other forty-nine rats, which, although inoculated with similar typhoid germs, had been kept in pure surroundings, for out of the whole number only three died. These experiments show very clearly what an important and determining influence the inhalation of sewer air had in increasing the pathogenic or disease-producing properties of the typhoid bacillus, an almost innocuous growth of this micro-organism being rendered highly virulent and extremely fatal to the animals into which it had been inoculated. This result was very possibly brought about by the diminished vitality of the animal itself and its consequent inability to throw off or resist the typhoid infection in question, although of such a comparatively harmless type.

DECOMPOSING ANIMAL MATTER.

In another set of experiments Dr. Alessi exposed guinea-pigs and rabbits to the gases emanating from materials purposely allowed to get into a rank state of decomposition. The experiments were conducted in a similar manner to those previously described, and it was found that these gases were also very pronounced in their action, for out of seventy-two guinea-pigs which were compelled to inhale these noxious vapours, and which were treated with typhoid germs, only fifteen survived, while none of the guinea-pigs infected with typhoid germs but kept in pure air succumbed. Similar results were obtained with eleven rabbits, for all of those made to inhale foul air and inoculated with typhoid germs died, while not one of the eleven animals similarly treated but kept in ordinary surroundings died. In order to yet more strikingly, if possible, exhibit the influence of bad air on the animal system, Dr. Alessi took a weakened growth of the *b. coli communis*, an organism normally present in the human intestine, and introduced a small and usually regarded as perfectly harmless dose of it into animals kept in this foul air; in these experiments also the animals were destroyed.

ADAPTATION TO SURROUNDINGS.

How it is that frequently those who live in the precincts of badly drained surroundings, and habitually inhale sewer air, escape typhoid fever and other diseases, while the outsider who unfortunately exposes himself to such exhalations without previous training or experience often rapidly succumbs, is a question upon which Dr. Alessi has also attempted to throw some light. In the course of his experiments he found that it was the first two weeks of exposure to these noxious gases that the animals were most susceptible to typhoid infection, for as many as 90 per cent. of all

the animals inoculated during this period died, while when infected with typhoid germs in the third week of their sojourn in these polluted atmospheric surroundings, the mortality was reduced to 76 per cent. Thus, says Mr. Alessi, we probably have a practical illustration of how it is that the people habitually inhaling bad air gradually become accustomed to it, the system adapting itself to its surroundings, while the inexperienced stranger may, and often does, suffer very severely. At the same time it must be remembered that predisposition in this, as in other diseases, plays a very important part, and the initial susceptibility to disease, while varying in the case of different animals, will also vary with different individuals. We can only conclude by warmly congratulating Dr. Alessi on the admirable contribution he has made to sanitary science, a contribution which has demanded immense labour and much skill and experience.—*Daily Graphic*.

A LESSON FOR SIR JOHN BRIDGE.

EDWARD RUSSELL, of Graham-street, Pimlico, was summoned, on May 30th, by the St. George, Hanover-square, Vestry, for selling butter mixed with 25 per cent. of foreign fat. Mr. Rymer, who defended, said that the man sold it as he got it from a wholesale tradesman. Mr. De Rutzen fined him 40s. and costs, remarking that all the retailer had to do to protect himself was to obtain a warranty. In a similar prosecution against a Mr. Hurde, a coffee-house keeper, of Knightsbridge, a fine of £5 was imposed, the percentage of foreign fat being greater than in the last case. The magistrate said he believed it was perfectly true that the defendant had, as he said, been imposed upon himself, but the consumers must be protected. That was what the Act was passed for.

CORRESPONDENCE.

THE MERCHANDISE MARKS ACT.

To the Editor of FOOD AND SANITATION.

SIR,—I can fully bear out the fact mentioned by your correspondent "Customs," that so-called whiskey is shipped from Hamburg bearing labels which are intended to lead the consumers to believe they are getting quite a different article from that actually bought. A short time ago I had occasion to inquire of a German house their price for whiskey for export to the East, and when replying they sent me a few specimens of the labels they would use. These are before me now, and it may be interesting to your readers to know the wording on them.

No. 1. bears the words, "The Highest Type of Whiskey. ****

Brothers, Glasgow."

No. 2. "Very Old Genuine Highland Whiskey. **** and Sons, Whiskey Distillers, Glasgow."

No. 3 has the Scottish Lion as "trade-mark," and the words "Fine Old Scotch Whiskey. Exported only by E. S. and Co., London."

These cannot be described otherwise than as false marks, and yet the Germans do not blush to employ such deception. Of course, the bottles also bear a small label, with the words, "Made in Germany," but this is easily removed after the goods are through the Customs. The price at which this German rubbish is sold (about 3s. and 3s. 6d. per case of twelve quarts, 52 per cent. under proof, including packing and delivery f.o.b. export steamer in Hamburg) precludes the possibility of its being whiskey at all. The Germans are not altogether to blame for supplying such low-priced stuff, as, unfortunately, there is a demand amongst certain classes of the natives of Burmah and elsewhere for cheap whiskey, and, as I have not been able to find a Scotch house who will supply under 5s. or 5s. 6d. per case, our friends on the Continent take the business.

This we would, perhaps, be willing to put up with, if the deception I have pointed out was not practised, but I am afraid it is only too common. Can nothing be done to stop it?

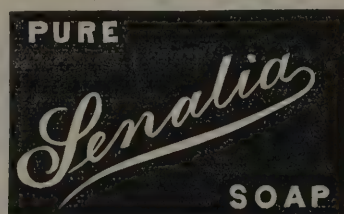
I am, Sir, your obedient servant,

SCOT.

London, June 5.

THE PUREST & BEST TOILET SOAP.

Triple-Milled, Super-Fatted, Delicately Perfumed.



THE TOILET SOAP OF THE FUTURE.

REMOVES ROUGHNESS of the SKIN, BLOTCHES, and PIMPLES.

Sample Tablet, Post Free for 6d.

JEYES' SANITARY COMPOUNDS Co., Ltd.,
43, Cannon Street, London.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

COLEMAN'S "WINCARNIS"

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LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

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A 2s. 9d. Bottle sent Post Free on receipt of 33 Stamps

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43, Cannon Street, London.**

Food and Sanitation.

SATURDAY, JUNE 23RD, 1894.

AGRICULTURE AND ADULTERATION.

OUR exhaustive exposures of the injuries done to English agriculture by adulteration have succeeded in raising a movement which two years ago was regarded as hopeless, into the position that it at present holds—a foremost place in the attention of those concerned with benefiting what industries yet remain with us. The Special Committee of the House of Commons will soon embark upon its labour of inquiring into the whole question of adulteration, and we may fairly claim the appointment of this Committee to be the result of our advocacy of the question; as we may also take to ourselves credit for the fact that our first six months' work in exposing adulteration caused an increase of some 3,000 in the samples taken for analysis, and that the last year will show, as the result of the agitation we initiated, an increase of at least twice this amount.

But while these facts in themselves are gratifying, there are grave evils affecting agriculture, which we have persistently pressed upon public attention, and amongst the greatest of these must be reckoned those of beer and spirit adulteration. Those responsible for these enormous frauds upon the public, and the ruin of barley and hop growers, represent what is possibly the wealthiest and most powerful interest in the country, and the enormous influence they possess, both in the House of Lords and in the House of Commons, no doubt warrants them in considering themselves as occupying practically an impregnable position. But however powerful that influence, and however brazen and dishonest may be the professions of those representing it, it needs only patience and organisation to break it down and to bring about a condition of things in which beer shall again be a pure and wholesome beverage, and whiskey cease to be maddening trash of Indian corn, potato spirit, and drugs. We therefore

wish every success to the movement for forming an association of those engaged in the hop industry, and are pleased to see that the importance of the question has at last been recognised by the leading daily newspapers. For example, who would have looked two years ago for expressions of opinion such as the following in the *Standard* for June 21st:—

"We say nothing of the claims on our regard which the national beverage should possess, though that is something; and facilities for the more general enjoyment of pure unadulterated beer would go nearly as far towards the diminution of intemperance as the Local Veto. We lay the chief stress on those grievances of which the hop growers themselves have reason to complain; and we believe that the public recognition of them would be followed at no remote date by some vigorous effort to ameliorate them. First and foremost stands what is called "the free mash-tub"—that is to say, the liberty allowed to brewers of using what ingredients they please in the manufacture of beer, and then selling the commodity as made of malt and hops. The hop growers, naturally, do not like this arrangement; their contention is that brewers have no right to sell one article of consumption on the pretence of its being another; and that purchasers, when they buy beer, ought to know what they are paying for and what they are drinking. Surely the adulteration of food and drink is a very serious evil, and to compel a dealer in and commodity to state honestly what it is that he is selling is no great piece of State tyranny. The opponents of the change have hitherto successfully resisted it, but they would soon find the difference if they had to deal with a well-organised association, determined on making the demand in louder tones, with more tenacious perseverance, and on a larger scale. The hop growers ask only what is consistent with common-sense and common justice; let them make their combination effective, and we can hardly bring ourselves to doubt that their claims will be conceded."

Two years ago it would have been impossible to find a leading newspaper advocating a demand for more stringent laws to suppress frauds in beer. The education of public opinion has been slow and difficult, but we have every reason to be gratified with the progress made.

LIQUORICE.

LIQUORICE has been known and used for many centuries in oriental lands, especially in Syria, where it is principally sold in a weak decoction as a refreshing drink, the extract being made by a special process to avoid extracting any of the bitter taste, and is sold by street vendors, nicely cooled, and is really a delicious drink when properly prepared, says the Pharmaceutical Era. In the vicinity of Damascus the root has been gathered from special localities where, probably owing to the kind of soil, it is sweeter than from other parts, then dried and crushed under heavy stones drawn round on it by mules, in the same manner that olives are crushed for the extraction of the oil. In this form it is exported in sacks, very largely in Egypt, Arabia, and many parts of Africa, where it is used almost entirely for making liquorice water, which is considered very wholesome for drinking in hot climates. The plant is found largely in Spain, also in Greece, Calabria, and Sicily, in many parts of Syria and Asia Minor, as well as in other parts of Asia and Europe. The plant dies down every year, and in appearance resembles a small rose plant, with a single green stem, growing to the height of from one to three feet, and sometimes even higher, having small leaves growing out from each side of the stem, and some of the plants bearing a small blue or purple star-shaped flower, followed by a small seed pod, enclosing two or three small seeds. The plant propagates itself from the root, and it is almost impossible to eradicate it from the soil, for if the earth be dug over to a depth of two feet or more, and all the roots be apparently taken out, enough small fibres will remain so that after three or four years the plants seem to be more thrifty and the roots more abundant than before. When the root is freshly dug in its green state it resembles in texture a small parsnip, and cuts easily in much the same way; is of a pale, slightly green colour internally, externally the colour varying according to the soil in which it grows. The growth of three years is required before the root is of much value. It has a rather unpleasant sweetish taste, somewhat resembling that of a raw sweet potato, and when dry loses about one-half its weight. The bark, in decorticating has to be cut off, as there is nothing that can be peeled off as in most roots. So great are the adulterations of liquorice that there is not more than one which pharmacists or medical men can rely on as being pure—the Solazzi brand.

DANGEROUS CANNED TOMATOES.

It is perhaps little known that there has recently been introduced to and used by the manufacturers of canned goods and preserves a substance for colouring tomatoes. In tomatoes of impaired quality of colour a single drop of the preparation will considerably repair this defect, and even in standard goods it is said that a marked change for the better takes place. The colouring matter is one of the most extensively used of the so-called aniline colours—eosin. It is prepared and put up in bottles bearing a label "tomato colour."

Only very minute quantities are necessary for the purpose sought, and it is hardly supposable that sufficient would ever be added to render the food prejudicial to health. Its physiological action has not, we believe, been studied. The practice, however, is to be deplored, since it is a deceptive one, and no advantage can accrue from it to the consumer. On the contrary, there are possible disadvantages. To persons afflicted with chronic disease it is not possible to state what aggravation it might cause, since nothing as yet is known as to the physiological effects of eosin. As a warning, however, we have for an example the now extensive use of salicylic acid as an antiseptic in food preserves. Medical science has proved this to be injurious, particularly in kidney disease, and its use is now universally condemned.

The use of eosin, or more exactly bromeosin, the compound used, is more particularly to be condemned, however, for its deceptive properties. There is no property it possesses that can be of advantage to the consumer, while injurious or inferior foods may be thrust upon him at the prices of more perfect ones.

There are chemical means, quite simple, of detecting its presence in preserved tomatoes, and the fraud is thus made an easy matter of discovery. The method in simplified form is as follows:

Strain off the solid matter and to the juice add a few drops of pure hydrochloric acid (muriatic acid) and shake this with ether. Draw off the ether which will contain the colouring matter, and agitate this with a dilute solution of caustic soda. The soda solution will contain the bromeosin, and will have a reddish-yellow colour with a fluorescent appearance. Some of the natural colouring matter of the tomatoes will also be extracted, and, unless the fluorescence is apparent it will be necessary to further remove this by acidifying the soda solution and repeating the operation by extracting with ether and shaking with dilute caustic soda solution, when the fluorescence will appear. If doubtful results are obtained, it would be advisable to submit a sample for professional examination.

SIR FREDERICK ABEL AGAIN.

IN the House of Commons recently Mr. McCartan asked the Secretary of State for the Home Department whether his attention had been called to the inquest held in the city of Belfast on the body of Francis Conlan, who died from burns caused by the explosion of an oil lamp as he was turning down the wick before

going to bed; and whether he was aware that the oil used in the lamp was an American oil known as the "Royal Daylight Oil," the flash-point of which was about 82deg. Fahr.

Mr. Asquith, in answer, stated: "Accidents with oil lamps do not as a rule come under my notice, and in Ireland I have no sort of jurisdiction in regard to the administration of the Petroleum Acts. In this case the only knowledge I possess of the accident in question is derived from the depositions of the coroner's inquest furnished by the hon. member himself; and as to the flash-point of this particular oil, I have no information whatever. Further, I am unable to say what is the *minimum* flash-point of Scotch oils, or that of the oils supplied to the War Office. As has been before more than once explained, the question of the relative safety of oils of particular flash-points is an extremely debatable one, and it is open to the gravest doubt whether the raising of the flash-point would tend to put a stop to accidents of this kind. It is one of the many points connected with amended petroleum legislation which would have to be carefully considered by a committee, and I shall be glad, if it is possible, to constitute such a committee; but in the present state of public business I cannot hold out any hope that fresh legislation on this very large and difficult subject could be successfully undertaken this session.

ADULTERATED MILK IN SOUTH SHIELDS.

AT South Shields, on June 15th, Jeremiah Marshall, Collingwood-terrace, was summoned for selling adulterated milk.—The Town Clerk (Mr. J. Moore Hayton) said the inspector called at the milk shop kept by the defendant on May 21st, and bought a sample of milk to be analysed by the public analyst. The milk was divided into three parts. The certificate of the analyst showed that the milk had been adulterated by 6 per cent. of added water.

Mr. Michael Pollock, inspector of food and drugs, bore out the above statement.—Mr. Newlands asked for the third sample to be sent to Somerset House for analysis. The defence had a perfect right to that request.—The Town Clerk pointed out that the milk had changed and was now useless for purposes of analysing, and upon this the Court refused the request.—Mr. Newlands then called evidence to show that no water was added to the milk from the time that the milk came into the charge of the defendant.

Dr. Legat said the Bench were satisfied that there had been this amount of water added, and the defendant, who was the person selling it, was liable. It was most important that people should have pure milk, because it was one of those articles that was so much depended upon in the rearing of children.—Defendant was fined 20s. and costs.

George Henderson, farmer, was also summoned for selling milk adulterated with 10 per cent. of added water.—The Town Clerk prosecuted and Mr. T. D. Marshall defended.—Michael Pollock, inspector under the Corporation, said on May 21st he went to the shop of a Mr. Green, in South Woodbine-street, and saw a boy delivering milk there from Mr. Henderson's place. He purchased a pint of the milk and divided it into two samples, one of which had been analysed and showed 10 per cent. of added water.—Mr. Marshall called evidence to the effect that the milk came into the charge of Mrs. Henderson as soon as it was brought from the byre and sent by her from the farm perfectly free from adulteration.—The Bench refused to send a sample to Somerset House, and imposed a fine of 20s. and costs in this case also.

MARGARINE v. BUTTER.

THE *New York Medical Journal* says:—Margarine ("oleo" or artificial butter) of pure quality is regarded as equal to genuine butter in digestibility and nutritive value. This view is further corroborated by the results of prolonged and thorough experiments reported at length in recent communications of the Vienna Imperial Academy of Sciences. For the experiments, only pure materials were used for the preparation of the margarine.

CO-OPERATION AND HONESTY.

JOHN SOUTHERN, a carman, was charged at the Rochester Police-court, on June 16th, with embezzling money, the property of the Rochester and District Co-operative Society. It was stated that the alleged defalcations amounted to £12. The magistrates dismissed three out of the four cases which were gone into, and in the fourth they sentenced prisoner to seven days' hard labour. The Mayor (Mr. E. W. Willis) said the magistrates were of opinion that the Co-operative Society had paid this young man a miserably inadequate wage—16s. per week—having regard to the position he held and the responsibilities devolving upon him in taking charge of a horse and cart and the Society's goods and moneys. It was the more necessary that persons should be paid a wage that would keep them honest when accounts were kept in such a slipshod way. If the society, instead of paying bonuses, gave their employes better wages, it would be more to their credit.

A GERMAN inventor has devised a little mustard-pot, from which the condiment can be squeezed by the pressure of a spring, without messing the fingers and the side of the pot as well. Spoonless mustard-pots are not altogether a new invention, but they have hitherto been expensive luxuries. It seems probable now, however, that they may come more generally into use.

ON BEEF TEA—LIEBIG'S EXTRACT— EXTRACTUM CARNIS AND URINE.

By RICHARD NEALE, M.D.

In the *Lancet* for October, 1880, Mr. G. F. Masterman draws attention to the chemical analysis of beef tea, and shows that it is analogous to urine, excepting that it contains less urea and uric acid. Some years ago, Mr. Masterman also gave analyses in one of the medical journals, but which of them I cannot learn, even from the author himself, showing that beef tea, most carefully prepared, does not contain, including alkaline salts, more than from 1.50 to 2.25 per cent. of solid matters, and that such matter is composed mainly of urea, kreatine, kreatinine, isoline, and decomposed hematin, exactly the animal constituents of the urine, except that there is but a trace of urea.

Many writers have endeavoured to impress the public and the profession with the true value of beef tea, viz., that it is not a nutrient but a stimulant, and that it mainly contains excrementitious materials. It appears, however, of little avail, for you constantly meet with those, even in the ranks of the profession, who believe beef tea to be really a powerful nutriment, while in most cases among the public your positive statement that in milk we possess a far cheaper and more powerful blood and flesh-making food than in beef tea, is met with a sceptical stare. A short time since a consulting physician wrote in one of our periodicals how he was not infrequently called to cases where he found the patient literally starving to death in the midst of plenty. Wines and liquors of all choice brands covered the table, with beef tea, jellies, and essence of meats in all their endless varieties, some of which, the consultant was told, were given every half hour, and that therefore the patient had been well kept up. By a speedy clearance of all but the brandy bottle, and with the addition of two or three pennyworth of milk, he had on several occasions rescued a young and valuable life from certain death.

The late Dr. Francis Sibson, in an admirable paper on Bright's disease and its treatment, published in the *British Medical Journal*, February, 1877, showed how detrimental beef tea may prove in some cases of Bright's disease, where the kidneys are already taxed to the utmost to throw off metamorphosed structures, and yet the metamorphosed structures of the muscles of the cow are superadded, for these very materials, had the animal lived, would have been passed away as urine. Frequently, too, beef tea is advised by practical physicians in diarrhoea, dysentery, and during diarrhoea of typhoid; certainly a large experience of tropical dysentery and diarrhoea has taught the writer to look upon this fluid in the light of poison in such cases.

Dr. Lauder Brunton has some very able remarks upon the occasional injurious results of beef tea (*vide Practitioner*, November, 1880): "We find only too frequently that both doctors and patients think that the strength is sure to be kept up if a sufficient quantity of beef tea can only be got down; but this observation, I think, raises the question, whether beef tea may not very frequently be actually injurious, and whether the products of muscular waste, which constitute the chief portion of beef tea or beef essence, may not under certain circumstances be actually poisonous. For although there can be no doubt that beef tea is in many cases a most useful stimulant, one which we find very hard indeed to do without, and which could hardly be replaced by any other, yet sometimes the administration of beef tea, like that of alcoholic stimulants, may be overdone, and the patient weakened instead of strengthened."

Many other writers who have from time to time endeavoured to impress the profession with the true value that beef tea possesses as a stimulant, but not as a nutritive agent, may be referred to by the aid of the *Medical Digest*, secs. 124 and 125.

The non-nutritive, but valuable stimulating powers of beef tea, and its excellence as a vehicle for flesh-making food, such as bread, being fully conceded, it will be interesting to note some facts proving that similar properties have long been known as pertaining to urine. In South America urine is a common vehicle for medicine, and the urine of little boys is spoken of highly as a stimulant in malignant smallpox. Among the Chinese and

Malays of Batavia urine is very freely used. One of the worst cases of epistaxis ceased after a pint of fresh urine was drunk although it had for thirty-six hours or more resisted every form of European medicine. This was by no means an unusual result of the use of urine, as I was told by many of the natives. Hypodermic injections of secale were then unknown. As a stimulant and general pick-up I have often seen a glass of child's or young girl's urine tossed off with great gusto and apparent benefit. In some parts of our own country the use of urine as a medicinal agent is not unknown. The use of urate of ammonia and guano was noticed by Bauer in 1852, who found their external use of value in phthisis, lepra, morphea, and other obstinate skin-diseases. Dr. Hastings's report of the value of the excreta of reptiles in 1862 in the treatment of phthisis will also be fresh in the recollection of the older members of the profession. Possibly other observers may be able to add further to our information regarding the medicinal uses of urine both at home and abroad.

THE LATEST AMERICAN LARD DODGE.

A PROCESS has been patented, says *The Paint, Oil, and Drug Review*, which claims to revolutionise the manufacture of compound lard, oleo-margarine, cotton-seed oil, and can also be applied to the refining of petroleum. The inventor is Alexander W. Winter, of Chicago, who, it is stated, has refused some 2,000,000 dols. for his discovery. After many months experimenting, application has been made for a patent for a "compound edible fat." A week ago the patent was issued, but for some time previously the projectors were busy arranging for the introduction of the new compound.

The Winter oil No. 2, as it is called, is a compound, using petroleum for a basis, and combining with it such vegetable or animal fats as are required to make it a stiff and useful compound. It is perfectly clear, white, and odourless. In this lies the importance it bears to the cotton-seed oil industry. Under the present system packers are compelled to contract for the oil in the summer before the cotton is pressed, then carry thousands of gallons in tanks, refining and deodorising as demanded. By the new process, it is claimed, a packer need not carry a barrel in stock, but orders the stuff when ready to use it.

The new oil is intended to replace largely cotton-seed oil, and it is claimed that arrangements have been perfected to commence at once the manufacture on a large scale. It is declared that the new oil can be produced at much less cost than the process used for cotton-seed oil. Compound lard is composed of tallow and stearine, which requires something to make it soft and pliable, and cotton-seed oil has furnished this requirement. This applies the same to the manufacture of butterine, wherein oleo-margarine and milk from the base and cotton-seed the medium of proper consistency.

The new oil is promised to be less expensive, more healthful, and handled easier and of the same valuable properties as cotton-seed oil. The owners of the patent claim to be able to supply all demands within thirty days from to-day, and big contracts have already been made. The process was discovered by Alexander W. Winter, a specialist in lard refinery and oil plant business. Speaking of the advantages of his compound, he said:—

"By the new process the oil is ready for use when received at consumers'. No stock need be carried, as it will be supplied as required, and it can be marketed much cheaper than cotton-seed oil. The latter is quoted at 35 cents., and while we cannot now tell just what the new oil will cost on the market, it will be considerably below that figure. The patent is not for sale. We license the packers to use the process. We intend to protect our patent and have written to packers all over the country, inclosing a copy of the letters patent and announcing that all rights would be upheld. We have already been approached by the cotton-seed oil people, who seek to control the patent, but that is impossible. Will the new process affect the Southern interest? Undoubtedly so, but we are not looking out for the interests of any other than our own industry."

There is no company formed, and no stock, as three men are associated as individual one-third owners.

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ADULTERATION OF SPICES AND CONDIMENTS IN THE UNITED STATES.

PART 2 of Bulletin No. 13 of the U.S. Department of Agriculture, Division of Chemistry, is devoted to a popular exposition of the origin of spices and the means employed for their adulteration, and contains as well an extended technical discussion of the subject and of the results of analysis both microscopical and chemical, and the methods which have been proposed by recent authorities for the detection of sophistication. The table of contaminations here given will furnish an idea of the extent to which the ingenuity of spice mixers has gone.

TABLE OF SPICES AND ADULTERANTS.

Spices.	Adulterants.
Allspice.....	Spent cloves, clove stems, cracker dust, ground shells or charcoal, mineral colour, yellow corn.
Cayenne	Rice flour, salt and ship stuff, yellow corn, turmeric, and mineral red.
Cassia	Ground shells and crackers, turmeric, minerals.
Cinnamon.....	Cassia, peas, starch, mustard hulls, turmeric, minerals, cracker dust, burnt shells, or charcoal.
Cloves	Spent cloves, clove stems, minerals, allspice, roasted shells, wheat flour, peas.
Ginger	Cereals, turmeric, mustard hulls, cayenne, peas.
Mace	Cereals or starch, buckwheat, wild mace.
Nutmeg	Cereals or starch, wild nutmeg.
Pepper	Refuse of all sorts, pepper dust, ground crackers, or ship stuff; rice, mustard hulls, charcoal, cocoa-nut shells, cayenne, beans, bran, yellow corn.
Mustard	Cereals and starch, turmeric, peas, yellow corn, meal, ginger, gypsum.

The materials in italics have been identified in spices examined in the laboratory of this division, but some of the commoner adulterants have not been found. Considering the spices individually, there are certain peculiarities, as they are met with pure and in the trade, which should not be overlooked.

MUSTARD.

Mustard, as sold in the ground state, should be the farina or flour of the black or white mustard seed—that is to say, the flour from the interior of the seed bolted or separated from the hulls.

The two kinds of seed, although derived from plants of the same genus, are somewhat different in their chemical composition. The black seed is much the more pungent, and develops, on mixing with water, a volatile oil, which gives this condiment its penetrating character. There is also present in the seed a complicated organic substance of a bitter nature, to which is due some of the peculiar flavour, and while the white seed forms no volatile oil with water, it contains more of the bitter substance. It is, therefore, very common to mix the two in grinding. The sources of the seed are various. In our markets at present there are quoted California black and white, Dutch, Trieste black, and English—the last being the most valuable.

In the manufacture of the seed into flour for the market two customs have arisen which change the nature of the original substances, and therefore would commonly come under the head of adulteration. One is extremely old, the addition of wheat flour for the purpose of making the condiment keep better. This necessitates the restoration of the yellow colour by turmeric or other dye stuff. These diluents are harmless, as a rule, but there seems to be no reason for their use, and it is gradually becoming commoner to find mustard free from them in English brands.

The other custom is the abstraction of the fixed oil by pressure before grinding the seed. The percentage of this oil is over 30. It adds nothing to the flavour of the mustard, probably injures its keeping qualities, makes the seed more difficult to mill, and its removal is therefore a benefit. It is a nearly universal custom at the present day in this country, and is not considered as fraudulent by the Canadian analysts.

Falsifications of mustard other than those mentioned are not common, although gypsum has been found in low-grade mustard and several other adulterants, among them ginger of low grade. The hulls bolted from the flour in the process of manufacture are preserved and form the basis of the adulteration of many other spices.

PEPPER, BLACK AND WHITE.

Pepper is more in demand than any other spice, and in consequence is more adulterated. Its appearance in the ground form, especially of the black, is such as to make it possible to use all sorts of refuse for this purpose, and almost everything that has been used as an adulterant has been found in pepper. White pepper, which is simply the black deprived of its outer black coats, is, of course, less easily falsified; but in France it is diluted to an immense extent with ground olive stones, which bear a striking resemblance to it. Among the samples from Washington grocers pepper sweepings—that is, husks and dirt—rice or corn, and mustard hulls were the commonest admixtures. Sand is said to be very commonly added abroad, but has not been met with here. In Canada and New York ground cocoa-nut shells are a cheap source of adulteration, but they have not extended so far south.

Specimens from Baltimore mills of very low quality goods were found to contain but little pepper, and that of the worst quality, being made up of cracker dust, yellow corn, cayenne, and charcoal, in so disgraceful a way as to be visible to the unassisted eye on close examination.

The quality of a ground pepper can be told by an expert from its weight and colour, and on examination with a lens of low magnifying power. The particles are not coarsely ground, and it is not difficult to pick out pieces of husk, yellow corn, and rice, and, if necessary, a more careful investigation under a microscope of higher power will serve for confirmation. Black pepper, in our experience, is much more liable to adulteration than white, although it is perfectly easy to dilute the latter with broken rice or cracker dust, which are inexpensive. All these materials, fortunately, owing to the grossness of the adulteration, are readily recognised, and there is hardly the necessity for recourse to chemical analysis. There has been, however, considerable investigation in this direction, so that there are means of confirming the optical examination which are of great value. Determination of the amount of starch is one of the methods upon which some reliance can be placed; for if under the microscope foreign starch is not detected, then the addition of "P. D." or other starch free adulterants will diminish the percentage found, and the reverse. In this way, too, one is able to arrive at an approximate conclusion as to the proportion of adulterants added, which can only be estimated within wide limits under the microscope.

In spite of the immense amount of adulteration, it is possible from the best shops to obtain pure ground peppers, but it is, at the same time, safer to grind the whole berries with a family spice-mill as they are needed. The sources of our pepper supply are Tellicherry on the west coast of Hindostan, which is graded high, and Penang and Singapore for the East, Sumatra, Java, etc. The importations are principally through London, and not direct. The supply of ground pepper from England will usually be found more pure than our own brands and, at the same time, is naturally more expensive.

CAYENNE OR RED PEPPER.

This condiment should consist of the ground pods of any of several species of *Capsicum*, known as chillies or red peppers. It is said to have been adulterated with many substances, brick dust, red lead, and colouring matters; but this has only been found to be the case in two cheap Baltimore cayennes; while in Washington only rice has been detected, but that quite frequently. Inferior material is no doubt often ground, but the small value of the pods and the small quantity consumed does not tend to increase adulteration.

GINGER.

Ginger is the root, or, technically, rhizome, of a plant somewhat similar in appearance to our iris and flag. It is grown in various parts of the world and prepared with great care and great carelessness, being at times scrawed and bleached, at others simply dried in any condition, so that there is an immense number of varieties and qualities to be found in the market. They all, however, retain sufficiently the marked peculiarities of the starchy fibrous root to make the detection of adulterants easy. The common ones are the addition of wheat flour or some starch as a diluent, the colouring with turmeric to suit a popular fancy for gingerbread, or of spent material which has been used in making tincture. Mustard hulls and cayenne are also found in some cases, but have seldom been detected here. They are added to give pungency and make up for the addition of flour. Their detection is easy. The sources of our supply are Jamaica and the West Indies, Cochin China, Africa, and India. Jamaica is the best and most carefully prepared.

CLOVES.

The flower buds of the clove tree carefully picked and dried constitute the spice known by that name. Their valuable properties are due to the volatile oil which they contain, the best having as much as 16 per cent.

The removal of this oil is so very easy that it is the commonest method of deception to do so before grinding the spice, and to then dispose of it as pure. We have ready means of determining the loss chemically, but the microscope gives no indications. The addition of the cheaper clove stems is also practised, as they cost but 6 cents, when the buds cost 27. The microscope reveals their presence by certain cells which they contain, which are absent in the buds.

Pimento is sometimes substituted in part or entirely, as it has a clovelike flavour, but only 4 or 5 per cent. of volatile oil. It is worth less than one-fifth the price of cloves. Its chemical composition and its structure, that of a berry, reveals its presence. The addition of the coarser adulterants, mineral matter, cocoa-nut shells, flour, peas, and the like, have only been observed in two instances, but no doubt frequently occur, as has been found in Canada.

The sources of our supply are the East Indies (Amboyna), African (Zanzibar), and American, ranking in value in the order named. Cloves should, if possible, be always purchased whole, as they deteriorate less readily in that form.

CINNAMON AND CASSIA.

These spices are the barks of several species of the genus *Cinnamomum*, the true cinnamon being a native of Ceylon, where it is largely cultivated, and the cassias being derived from several other species growing in China, India, and the East Indies. Cinnamon as it reaches the market is very thin, the outer and inner coats of the bark having been removed. Cassia, on the other hand, is thick, as it consists of the entire bark, and can be distinguished by its retaining its natural outer surface. Cinnamon is by far more

valuable than the cassia, as there is a smaller supply, and intrinsically it contains a much greater proportion of volatile oil, and that of higher and more delicate aroma. In consequence, cassia is largely substituted for cinnamon, and, in fact, not a particle of ground cinnamon can be found in the market. It can be found in the whole condition in good quality only in drug stores. Cassia exists in many forms and qualities, and sells wholesale at from 7 to 40 cents a pound. That known as Saigon is the best, and that exported from Batavia the poorest. Cassia buds also hold a small place in the market.

The detection of the substitution of cassia for cinnamon, since the barks are of trees of the same species, is more difficult than is usually the case, and may prove troublesome to a novice. The presence of more woody fibre in the latter with the aid of chemical analysis serves, however, as a reliable distinction. In the samples which have come into our hands, not a particle of material labelled ground cinnamon proved to be anything other than cassia. The spice millers appeared, however, to be satisfied to stop at this point, and in only one case was there addition of cheap stuff to the cassia. When added, there is no difficulty in detecting it, as has been done here and in Canada, where peas, starch, ground shells, and crackers have been found in powder labelled both cassia and cinnamon.

The barks can, in most cases, and especially the cinnamon, be used nearly as well in the whole condition, and should at least be so purchased and then ground. A slight acquaintance with the appearance of the different qualities will teach one the proper selection to make.

NUTMEG AND MACE.

These spices are different portions of the fruit of a tree known as the nutmeg tree, *Myristica fragrans*, the nutmeg being the inner kernel, and the mace one of the outer coats or arillus. The tree grows principally on the Banda Islands, and the spices reach us through London. They can always be obtained in their original condition, and should be so purchased. When ground they are mixed with diluents of various descriptions, principally cereals and their refuse, which are easily detected. Owing to the infrequency of the sale of the powdered nutmeg and mace, their adulteration has attracted but little attention.

THE SIXTEEN COMMANDMENTS OF THE PARIS ACADEMY OF MEDICINE.

THE Academy of Medicine has condensed into the following sixteen propositions the most important hygienic rules for the care and management of infants. We reproduce them here with the sincere hope that all mothers and nurses will commit them to memory and observe them as faithfully as the ten commandments of holy writ—

1. During the first year the only suitable nourishment for an infant is its own mother's milk, or that of a healthy wet-nurse. Suckling should be repeated every two hours—less frequently at night.
2. When it is impossible to give breast milk, either from the mother or a suitable nurse, cow's or goat's milk given tepid, reduced at first one-half by the addition of water slightly sweetened, and after a few weeks one-fourth only, is the next best substitute.
3. In giving milk to an infant always use glass or earthenware vessels, not metallic ones, and always observe the most scrupulous cleanliness in their management, rinsing whenever used. Always avoid the use of teats of cloth or sponge, so frequently used to appease hunger or quiet crying.
4. Avoid carefully all those nostrums and compounds so liberally advertised as superior to natural food.
5. Never forget that artificial nourishment, whether by nursing bottle or spoon (without the breast), increases, to an alarming degree, the chances of producing sickness and death.
6. It is always dangerous to give an infant, especially during the first two months of its life, solid food of any kind—such as bread, cakes, meats, vegetables or fruit.
7. Only after the seventh month, and when the mother's milk is not sufficient to nourish the child, should broths be allowed. After the first year is ended, then it is appropriate to give light broths or paps, made with milk and bread, dried flour, rice, and the farinaceous articles, to prepare for weaning. A child ought not to be weaned until it has cut its first twelve or thirteen teeth, and then only when in perfect health.
8. A child should be washed and dressed every morning before being nursed or fed. In bathing a child, temper the water to the weather, carefully cleanse the body, and especially the genital organs, which require great cleanliness and care; and the head should be carefully freed from all scabs and crusts which may form. Where the belly-band is used, it should be kept on for at least one month.
9. An infant's clothing should always be so arranged as to leave the limbs freedom of motion, and not to compress any portion of the body.
10. An infant's clothing should be studiously adapted to the weather, avoiding at all times exposure to the injurious effects of sudden changes in temperature without proper covering; but nurseries and sleeping apartments should invariably be well ventilated.
11. An infant should not be taken into the open air before the fifteenth day after birth, and then only in mild fair weather.

12. It is objectionable to have an infant sleep in the same bed either with its mother or nurse.

13. No mother should be in too great a hurry to have a child walk; let it crawl and accustom itself to rising on its feet by climbing on articles of furniture, or assisted by the arms of a careful attendant. Great care should be taken in the too early use of baby-waggons, etc.

14. No trifling ailments in infants, such as colics, frequent vomiting, diarrhoea, coughs, etc., if persistent, should be neglected—a physician's advice should be at once obtained.

15. In cases of suspected pregnancy, either of mother or nurse, the child should be weaned at once.

16. A child ought to be vaccinated after the fifth month, or earlier should small-pox be prevalent.

A CHEMIST AND HIS DRUGS.

JOHN CROWTHER, chemist, of Grassington, appeared at Skipton to answer a charge preferred against him by Mr. Randerson, acting on instructions from the County Council, of selling adulterated spirit of nitre. As a result of the purchase from the defendant by the inspector of a sample of tincture of rhubarb and sweet spirit of nitre, the county analyst certified that the tincture of rhubarb was right, but the nitre submitted to him for analysis had an addition of 4 per cent. of water. In addition, the sample was very deficient in real nitrous ether, which was stated to be the most important remedial constituent of this drug. "This deficiency," the certificate stated, "was not improbably due to the presence of excess of water, as this greatly increases the tendency of sweet spirit of nitre to undergo gradual deterioration in strength by keeping." The defendant, in defence, explained to the Bench that he sold the nitre to the inspector in exactly the same condition as he purchased it from the wholesale chemists. It was possible that it might have decomposed with keeping, but that was not his fault. He sent a sample of the same spirit to the wholesale dealers and they had written saying they hoped he would have no difficulty in meeting the case, as the present specific gravity of the sample they had analysed, fairly proved that there had been no attempt whatever at adulteration; while the deficiency in nitrous ether was from being kept, it being impossible to keep that article without decomposition taking place. That, the defendant contended, clearly proved that he had not been guilty of adulterating the nitre, while the deficiency of nitrous ether was something that could not be avoided in a country business such as his. In answer to Mr. Taylor, the defendant said he had had the nitre in stock since 1890.—The Chairman: There is no doubt the nitre will depreciate in strength, but that does not account for the excess of water.—The Defendant: I don't know where the water came from, although there would, of course, be some when it was manufactured.—The Chairman: Why don't the wholesale dealers from whom you purchased the spirit come here to defend you?—The Defendant: Because of the length of time I have had it in stock, I expect. I am perfectly sure that the article was sold as I purchased it from the wholesale chemists.—The Chairman remarked that the duty of the magistrates was to defend the public from being defrauded, for when they purchased a drug they naturally expected to get the best. It would have looked better if the wholesale dealers had been present on behalf of the defendant. They did not wish to say that the defendant adulterated the drug at all, because, by saying so, they would be injuring the defendant in his business. But the fact remained that the public analyst had declared that what the defendant had sold was impure. The public must be protected, and especially that part of the community in outlying country villages. He would advise the defendant to buy smaller quantities, and thus not be obliged to keep it in stock so long as four years. The defendant would be fined 20s. and costs, and, if he thought he was being hardly dealt with, he had his remedy against the wholesale dealers.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(C. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON E.

PLYMOUTH B.C. AND ADULTERATION OF MILK.

MR. ANTHONY asked for particulars with regard to the adulteration of milk in Plymouth, which recent analyses showed to be very great, showing a loss to the inhabitants of a large sum in the value of the article sold.—The medical officer (Dr. Williams) promised to lay the analyses before the Council at its next meeting. Some of the adulteration was very slight.

SPURIOUS DEMERARA SUGAR.

WILLIAM HALL, of 69, Castle-street, grocer, was summoned at Bristol, on June 18th, for selling sugar which was not of the substance, nature, and quality of the article demanded, contrary to the provisions of the Food and Drugs Act. Inspector Hazell said he purchased a pound of Demerara sugar of the defendant, which had been analysed and found to consist of crystal sugar dyed with coal tar colour. Mr. Holman Gregory represented the defendant, and he contended that the phrase "Demerara sugar" was only a generic term. Very little sugar actually came from Demerara, and all the yellow sugar that went by the name was dyed. The magistrates imposed a fine of 40s. and costs.

BOGUS BUTTER AT BATH.

THE Inspector of Nuisances (Mr. Montagu) presented several certificates from the City Analyst dealing with samples which he had taken. One of these related to a sample of supposed butter, but the certificate stated that the fat contained in the article was not prepared from milk, the article being margarine. The Inspector said he bought the sample on the understanding that it was salt butter. After making a statement to this effect, however, the person in charge of the shop said she was not sure whether it was butter or margarine, because they had been selling it as butter or margarine. There was no ticket attached describing the margarine as prescribed by the Act. The brother of the person who sold him the sample, came to him in the afternoon, and stated that what he had had was margarine. He paid 10d. per lb. for it. Mr. Waldron: What is the price of margarine? The Inspector: You can buy it at almost any price; 8d. or 9d. Mr. Phillips: What can you buy cart grease at? Mr. Farwell, as the margarine was sold in a poor neighbourhood, moved a prosecution. Mr. Phillips seconded. They were there to protect the poor, and an example ought to be made. On the motion of Mr. Waldron, however, it was agreed to have the vendor, who was in attendance, before the committee and caution him. This was duly carried into effect.

TOPPING'S LARD.

AT the Bristol Police-court, on June 18th, Messrs. W. Pethick and J. C. Godwin, the magistrates present, were engaged in hearing a number of cases under the Food and Drugs Act against tradesmen who were summoned for selling adulterated goods. In the first of these,

William Sheppard, grocer, of No. 23, East-street, Bedminster, was summoned, under the Food and Drugs Act, for selling lard adulterated with 10 per cent. of beef stearine, which was not of the substance, nature, and quality of the article demanded. The defendant was represented by Mr. Holman Gregory, and Mr. Mawer (Clifton, Carter and Co.) watched the case in the interests of Mr. T. B. Topping, refiner, of Belfast. Inspector Evans stated that he purchased a pound of lard at the defendant's shop, which had been analysed by the city analyst, and found to contain 10 per cent. of beef stearine. Mr. Gibbons, wholesale provision merchant, of the Countership, Bristol, stated that he sold the defendant four barrels of bladder lard, each bladder being stamped as guaranteed pure. The defendant asserted that he purchased the lard as pure. The Bench adjourned the case until Thursday, and the chairman announced that the magistrates would give their decision then.

THE WARRANTY SWINDLE.

MR. R. GIBSON, Limerick, writes:—Both the purchaser and the honest trader are very greatly prejudiced by the sale of foreign margarine as pure butter with a warranty. Kindly allow me to give absolute proof of this. Two years ago I was asked to tender with sample for ten tons of tinned butter, second quality. I did so at a price that would not have left a clear 1 per cent. profit on the transaction, as I was anxious to secure the order. I was beaten 6s. per cwt., and the sample that beat me was sent to me, and I was told it was a foreign brand warranted pure butter. It was a quality of margarine that I could have supplied, and made a good big profit on, at 10s. per cwt. less than the contract price, but I should have branded it margarine, while this foreign fraud was branded "warranted pure butter." In that case the buyer was prejudiced to the extent of 10s. per cwt. and I was prejudiced, not only by the loss of the order, which was not any great loss at the price I had tendered at, but I was put down as wanting a much higher profit and being more exorbitant than the foreigner, while I was really willing to take the order at 1s. per cwt. profit, and the foreigner must have been getting very nearly 2d. per lb. profit. Of course it was also another instance of how cheaply those foreigners were satisfied to work, and what exorbitant rascals those Irish fellows are! While really the foreigner was making the plunder, because he was not afraid or ashamed to lie in the most barefaced manner, while the Irishman had offered to work for hardly a living profit, or for fully eighteen times less than the foreigner got.—I am, &c.,

Limerick, June 4th.

R. GIBSON.

A HEALTHY FINE.

HENRY GINGER, butcher, of Bierton, near Aylesbury, was summoned at Guildhall, London, on June 20th, for that he was the owner of four pieces of diseased beef which were sent to the London market intended for sale for human food.—Mr. Vickery appeared in support of the summons, and stated the circumstances under which the charge arose. It appeared that Mr. Griffin, a farmer, had a cow which was taken ill, and was lying in a field unable to get up. He sent for the defendant, who killed and dressed the animal, and said he would pay Mr. Griffin according to what the carcase fetched.—Defendant denied that he was the owner of the meat.—Sir Reginald Hanson came to the conclusion that the defendant was the owner, and was responsible. He would have to pay a fine of £50 and costs, or one month.

ADULTERATION AT BRISTOL.

AT Bristol on June 18th, John Leonard, a dairyman, of 11, Thrissell-street, St. Philip's, was summoned for selling milk adulterated with water. Inspector Thomas Hardy purchased a pint and a half of milk from the defendant, who was hawking in Stapleton-road, and an analysis revealed the fact that the milk was adulterated with 65 per cent. of added water. On the same day, May 30th, he purchased another sample of milk of the defendant from a different can, in Thrissell-street, and this was adulterated with 13 per cent. of water. The defendant asserted that the can from which the first sample was taken contained only the washings of the can and measures, and was not for sale. A fine of £5 and costs was imposed.

Jane Watkins, grocer, of 124, Easton-road, for selling coffee adulterated with 55 per cent. of chicory, was fined 10s. and costs. The defendant asserted that she had recently acquired the business, and was ignorant of the true nature of the coffee.

George Scudamore, grocer, of 29, Penn-street, St. Paul's, for exposing for sale a barrel of margarine unlabelled, was fined 20s. and costs. The defendant was represented by Mr. Gregory, and pleaded guilty.

WORKHOUSE MILK.

AT Ennis Petty Sessions Sergeant McHugh, inspector under the Food and Drugs Act, had P. Considine, of Fountain, summoned for selling adulterated milk to Ennis Union.

Sergeant McHugh deposed that defendant was a contractor for the Workhouse, Ennis, for a supply of milk to be delivered daily at the institution. According to the Act of Parliament milk sold under a contract came under the provisions of the Act, and by virtue of the Act any constable or inspector under that Act was empowered to take a sample of any article of food and submit the same to be analysed.

Mr. E. J. O'Meehan, solicitor, who appeared for the defence, said it appeared there was considerable doubt in the case. A lot of the milk had been sent to Sir Charles Cameron. The day on which the sample of his client's milk had been sent away the weather was unusually inclement, and there were certain circumstances surrounding it, and he would ask their worships for an adjournment of the case for a week when he would be in a position to produce Dr. Cameron's analysis.

Mr. Willis: But it is already analysed.

Mr. O'Meehan: Yes, but we have sent on for another analysis. It appears the guardians sent different samples to Sir Charles Cameron.

The case was accordingly adjourned for a week.

FOOD AND DRUGS ACT.

COST OF PROSECUTIONS IN GLAMORGAN.

AT a meeting of the Glamorgan Finance Committee, held in Cardiff on June 12th, Councillor David Morgan asked for an explanation with reference to the taxed costs of Mr. W. E. R. Allen, as prosecuting solicitor in proceedings initiated by the county authority under the Food and Drugs Act, these costs amounting to nearly £380. Mr. Morgan said he was under the impression that according to the contract between the county council and the clerk (Mr. Franklen), in accordance with the provisions of the Local Government Act, such work as that indicated should be undertaken by the clerk. What, he asked, was Mr. Allen's position? Was he not assistant clerk to Mr. Franklen?—The Chairman (Mr. O. H. Jones) said this question was raised at the last meeting of the committee and explained on that occasion. A solicitor must be employed in these police-court prosecutions. The clerk of the council was not a solicitor, and if he had not employed Mr. Allen, he must have secured the services of some other solicitor, who would require to be paid.—Councillor Morgan asked if under the Local Government Act the clerk was not called upon to perform the whole of this work.—The Chairman: Certainly not—not contentious legal cases. It is entirely outside his salary. Besides, he could not undertake solicitor's work if he would.—Councillor Morgan: No, but he could get another man to do it, and pay him. I argue that he gets plenty of money to do so.—The Chairman: That is not in the agreement with our clerk. When the salary of the clerk was fixed his duties were clearly and fully stated, and they did not include these prosecutions.—Councillor Morgan: Have we ever had a definition of the clerk's duties?—The Chairman: Yes; the subject was elaborately gone into at the formation of the county council.—The accounts were passed. Replying to the chairman, the Clerk said the appeals under the Food and Drugs Act had cost the county £1,000.—The Chairman: Owing to the judges' bad law we have to pay that amount.

WHISKEY ADULTERATION.

AT Aberdare Police-court, on June 12th, Margaret Davies, landlady of the Miners' Arms Inn, Llwydcoed, was summoned for selling to Inspector John Davies, whisky not of the nature, substance, or quality demanded by the purchaser.—The certificate of the county analyst showed that the whisky was 21½ under proof, and the defendant was fined 50s. and costs.

AT the Shire Hall, Nottingham, on June 13th, Samuel Slater, landlord of the Boat Inn, Beeston, was summoned for selling whiskey adulterated contrary to the form of the statute provided in such case, on the 1st ult. William Crabtree, inspector of Weights and Measures, proved the case. The whiskey sold to witness on the occasion named was of the lowest legal strength, 96 parts, with 4 parts of water added. Mr. Berryman, for defendant, sought to show that his client had been the victim of unlucky circumstances. There was a previous conviction against defendant, and he was now fined 25s.

THE BREWER CAN PRACTISE THIS GAME WITHOUT BEING FINED.

AT Lambeth on June 18th, John Thomas Smith was summoned by the Excise for diluting beer. Mr. Squires, from the Solicitor's Department, Somerset House, appeared in support of the summons, and said the case was a bad one, the dilution being equal to 6½ gallons to a barrel of 36 gallons. The defendant carried on business at a fully-licensed house in Marmont-road, Camberwell, and on March 27th a supervisor of Inland Revenue took a sample of beer from a cask in the defendant's cellar. Upon examination at Somerset House, it was found that the beer had been diluted at least to the extent mentioned.—The defendant said his instructions to the cellarman were that he was in no way to dilute the beer, and the cellarman assured him that he used only a gallon of finings. The defendant had no chance of defending himself, as the Excise did not divide the sample, and he heard nothing of the matter for two months.—Mr. Squire pointed out that the defendant was present when the officers called, and could have had a sample if he had chosen to ask for it.—Mr. Biron (to defendant): You were there when they took the sample, and any man of ordinary intelligence would have taken a sample himself.—The defendant said samples had been taken from his place on previous occasions without any complaint being made. There must be some mistake in this case.—Mr. Biron ordered the defendant to pay a fine of £30, and £2 10s. costs.

THE CHOCOLATE ADULTERATION CASE.

THE Glasgow Health Committee have decided to appeal against the decision of Sheriff Birnie in dismissing the case against Downie Brothers, Candleriggs, who were charged at the instance of the Sanitary Authorities with selling chocolate cigars containing 4 per cent. of paraffin wax. This decision is to be commended. The use of paraffin wax in food is intolerable. It has recently been employed for waterproofing buildings in New York by the following method:—

The work is done by two men on a suspended painters' stage. The wall surface is first heated by stoves, which are essentially sheet iron boxes 24 inches square and 4½ inches thick, having one of their largest sides closed only by a netting of ½-inch wires. These stoves hang freely from a light chain, and are filled with burning charcoal, which, when the open side is opposed to the wall surface, heats it sufficiently in from five to ten minutes. The paraffin is kept melted over a charcoal fire at a temperature of about 150deg. Fahr., while the wall surface is warmed to about 180deg. Fahr. to receive it, and is afterwards treated to a brief roasting to about 200deg. Fahr. The common hard bricks absorb a variable quantity of paraffin proportional to their porosity and temperature; the average absorption being about 2lbs. per square foot. Parts of the wall inaccessible by the heating stove, mouldings, cornices, and so forth, are heated by the ordinary painters' blow-lamp. A little creosote is added to the paraffin, to prevent vegetable growths. Inasmuch as the wax is caused to penetrate into the masonry, where it sets when it reaches a depth at which the superficial heating has not raised the temperature of the brick or stone above its own melting-point, it is claimed that the treatment is hardly visible from the outside, while it renders any wall perfectly and permanently impenetrable by moisture.

It is very evident that it is better to employ it as a coating for walls than as one for children's stomachs.

BAD MEAT IN DARLINGTON.

EXEMPLARY FINES.

AT the Darlington Police-court on June 19th, Thomas Scott, butcher, was charged with having deposited in his slaughter-house in Back Mount-street, on June 8th, four pieces of meat, for the purpose of preparation for sale and intended for the food of man, which was unfit for human food.—Mr. Raymond Stevenson appeared to prosecute, and Mr. Smith (Messrs. T. Barron and Smith) for the defence.—Thomas A. Atkinson, chief sanitary inspector, stated that on June 8th he applied for a search warrant and broke into defendant's premises. He was accompanied by the medical officer of health, the veterinary inspector, and Mr. Reed, assistant sanitary inspector. He found nearly a complete hind-quarter, a

great portion of two fore-quarters, and a piece of thin rib of beef hanging up, properly dressed for sale. The smell from the meat was very offensive, and the meat was very dark in appearance and damp. One side of the fore-quarters was very bad indeed. The meat was unfit for food. Upon the report of the medical officer and Mr. Stevens, Mr. Webster made an order for the meat to be destroyed. Witness had it removed to the Corporation yard, and sent word to the defendant that he would keep it there until 11 o'clock the next morning, and that he would examine it with witnesses if he thought fit. Defendant did examine it with a veterinary surgeon, and after hearing what they had to say Mr. Webster confirmed the order, and the meat was destroyed. The meat weighed in all about 22 stones.

Dr. Lawrence, medical officer of health, said he saw the meat hanging in the slaughter-house dressed in the usual way, and to all appearance intended for the food of man. It was quite unsound. It was discoloured, and separating between the muscles he found there was a glary fluid such as was found in diseased meat. The smell was very bad indeed. Good meat might have got into that state in about a month. He did not think it was the flesh of a healthy animal.

Mr. Stevens, veterinary surgeon, said he examined the meat. It was unsound, and there was a very bad smell to it, which was characteristic of diseased meat. In some parts the flesh was quite decomposed. Some of it was very dark, and some was not so dark. He cut into a dark portion and found the interior was as dark as the outside. It was very bad meat indeed and totally unfit for human food. He should say the animal had died, but he could not satisfy himself on that point because all the internal organs had been taken away.

Mr. Smith said the defence was that the meat was not there for the purpose of preparation for sale, and he contended that there was no evidence that it had been deposited there for preparation. It had been prepared before. It was in the market the Saturday before, and on Monday a part of it was still there. The part Scott could not sell he took back to the slaughter-house, where he left it. On the Wednesday he thought it was getting a little off. He cut some off for his own dinner, and he ate some of it on Wednesday, Thursday, and Friday. He did not consider it so bad. Still he did not intend selling it, but intended to destroy it. The Bench retired, and on their return into Court the Mayor said the Bench took a very serious view of the matter. They felt it was a case which struck at the root of the public health. They had decided to fine defendant £10 for each of the four pieces, or £40 in all, or in default three months' imprisonment. Defendant would also have to pay the costs, or be imprisoned for an additional fourteen days. Defendant said he would go to prison.

James Douglas Hardy, butcher, of 30, Outram-street, pleaded guilty to exposing unsound meat for sale on June 8th. Mr. R. Stevenson appeared to prosecute in this case also.—Mr. Atkinson said he visited defendant's shop, and there found four pieces of beef which emitted a bad smell and were dark in colour and watery. He considered them quite unfit for food. Two pieces were on the block, one hanging up and one in the window. He took the four pieces, weighing about 10½lbs., away, and they were destroyed on the order of Mr. Webster. He gave defendant an opportunity of inspecting the meat with witnesses after it was removed.—Dr. Lawrence and Mr. Stevens both stated that the meat was unsound and quite unfit for human food.—Defendant said the meat was not intended for sale, but for his own consumption.—The Mayor said that, as it was defendant's first offence, the Bench had decided to fine him £10 and costs, or six weeks' imprisonment. He would be given time to pay.

AT Hanley on June 11th, William Woolrich, milkseller, Stoke, was charged by Mr. Knight, inspector under the Food and Drugs Act, with having had in his possession a quantity of milk from which 30 per cent. of the cream had been abstracted. (Mr. Richardson appeared for the defence, and stated that the milk was in the same condition when sold as when purchased by the defendant for retail purposes. The defendant was fined £5 and 16s. 6d. costs.

AT Greenwich on June 19th, William Simpson, of 8, King-street, Deptford, was summoned by the Greenwich District Board of Works for selling milk with 30 per cent. of added water. He said he had been in business for fifty years, and had only bought the milk five minutes before the inspector was served. Mr. Kennedy fined him 5s.—John Beckwith, of 19, Milton-court-road, New-cross, was fined 40s. and costs for selling butter admixed with 85 per cent. of margarine.—John Robert Locker, of 34, Coldbath-street, Greenwich, was fined 20s. and 2s. costs for selling milk deficient in cream to the extent of 70 per cent.

A CURIOUS FLAW IN AN ADULTERATION CASE.—At Southam, on June 18th, Thomas G. Grant, farmer, Southam, was charged with selling adulterated milk.—The case was adjourned from the last court to enable the Bench to consider a point raised by Mr. G. H. Salmon, the Warwickshire County Council inspector, as to the liability of a farmer whose milk was impoverished though an insufficient quantity of nourishing food being supplied to the cows.—The Chairman (Mr. W. T. Chamberlayne) yesterday stated that the Bench could not decide this point, but there was a flaw in the case as presented to them, and it would have to be dismissed. From the evidence it did not appear that the inspector specified that the milk must be new when he purchased it, and therefore he might have been supplied with skim milk.

BACILLI IN THE AIR.

I ASK a glass of water or of claret or of beer;
 I go to kiss a pretty maid; she turns away with fear.
 I eat some lemon jelly that's been standing on the sill,
 And they tell me all are loaded—that they're warranted to kill.
 I'm not much up in science, but I know a thing or two;
 I know that if I do not eat or drink or kiss a few,
 Of those fashionable, dreaded germs I certainly will die,
 For I'd have to give up breathing to escape the bacilli.
 Bacteria, bacteria! I'm not afraid of you,
 The world will roll around the sun for all that you can do;
 So on pound notes and papers and on kisses and on food
 Just hand me common bacilli—I'm not a science dude.
 And what's the use of living if you cannot eat or drink,
 If pretty girls and banker's notes and even printer's ink,
 And country fairs and pencils are only other terms
 For the rapid-transit system of the scientific germs?

DRYING APPARATUS FOR LAUNDRIES.

In the Liverpool public laundries at Lodge-lane the drying chambers were largely constructed of timber, and seeing the danger and liability of fire, the committee resolved to reconstruct these chambers, and while doing so to introduce the most improved method of drying clothing. Some months were spent in viewing various places to see the different methods, with the result of the present system being adopted, viz., drying by the Blackman system of dry air in motion. The chambers are so constructed that each individual washer's clothing is separately under lock and key; thus avoiding thefts, which under the old system were always occurring. The chambers are in two storeys, and at one end there is an 80-tube air heater through which air is being drawn. The air, on its passage through the heater, becomes heated to a temperature of 120 degrees. It is then propelled by a Blackman fan through the drying chambers, carrying off the moisture from the clothing on its passage. Being a natural method of drying, the temperature in the chambers varies from 100 to 130 degrees dry heat, not at all oppressive; whereas in the old chambers the temperature was never under 160 and up to 200 degrees heat—exceedingly liable to cause the person using them to faint, many having done so. It is also expected that a saving in fuel will be made by the new system in the washhouse; heretofore, on damp or cold days, the condensation of steam was so great that it was impossible to see a yard ahead. This was very unhealthy for the washers and attendants, the clothing they were wearing becoming saturated with moisture. To avoid this, two fans have been fixed in the gable walls, which draw off the steam, and at the same time the heated air coming from the drying chambers prevents so much condensation taking place as heretofore, so that altogether the washhouse is now free from steam, a great contrast from the old system. The consideration of the health of the persons using the washhouse has been the committee's first thought, and the next point was the introduction of economizers in the working expenses of the establishment. The structural alterations have been carried out by the Corporation Surveyor, the engineering having been carried out under the instructions of the chief superintendent.

SEWER AIR AND SEWER GAS.

DR. ALEXANDER C. ABBOTT, of Philadelphia, in discussion of the subject of Sewer Gas, said that under ordinary circumstances the difference between the chemical composition of the air from sewers and that of the atmosphere outside was very slight, and that, contrary to general opinion, there were comparatively few bacteria. It was also very commonly but erroneously supposed that sewer gas was under very decided pressure. Professor Chandler had collected abundant evidence to the contrary. There was, moreover, not a single conclusive demonstration that the air of sewers stood in an etiological relation to many diseases for which it was popularly supposed to be accountable. The fact that the air in sewers was not under pressure, as a result of decomposition of the sewage, together with the fact that sewers were far from being air-tight, showed that the air of sewers was not likely to be driven out of the sewers under any great pressure.

But little was known as yet regarding the nature of the bacteria found in the air of sewers. Experiments had been made at the laboratory under his direction with a view to determining the effect of the breaking of gas bubbles on the conveyance of micro-organisms through the air. After endeavouring to simulate the natural conditions, it was found that such bubbling had but little influence of this kind. Bubbling was not a frequent condition in sewers, and, even should it occur, it was hardly conceivable that this would result in the transfer of micro-organisms from the sewer through the various branches and pipes leading to the houses. Then again, if many pathogenic bacteria were present in the air from the sewers, those who worked in the sewers would show it in the effect on their health.

Dr. Abraham Jacobi, of New York, said the atmosphere was a favourable medium for germs. They tended, however, to fall to a low level, and hence might often be breathed by little children when taller persons would escape them altogether. The force of evaporation was not sufficient to lift the smallest micro-organisms from a moist surface, and consequently they could only gain access to houses by the action of an exceedingly strong draft of air, and not usually then.

PRACTICAL DISINFECTION OF RAILWAY CARS.

PETRI and others *Arbeiten a. d. kais. Gesundheitsamte*, ix, ip. 111) inoculated one hundred and seventeen guinea-pigs with car dust. After from four to six weeks all of these animals then living were killed and examined for tuberculosis. Three positive cases of the disease were found among all these animals thus treated. These three cases came in the guinea-pigs after they were inoculated with the dust from two sleeping cars. Of the other one hundred and fourteen, infectious diseases killed forty-five, as follows: Twenty-seven died from peritonitis, fourteen from malignant oedema, two from abscess of the liver, one from abscess of the abdominal wall, and one from tetanus. Floors of cars were examined three hundred and eighty-three times, and 42.6 per cent. of these were found to have sputa present in notable amount. From thirty-four of the worst soiled, ninety-one guinea-pigs were inoculated. Of these, 30.8 per cent. died in consequence. The remaining sixty-three animals were killed in six weeks. All were healthy except three, which were found to have acquired tuberculosis. Among the seven kinds of bacteria found in the sixty-three guinea-pigs (killed), the pyogenic staphylococcus and streptococcus were the most conspicuous. For disinfecting cushioned, carpeted, and otherwise upholstered cars, steaming is the only absolutely reliable method. For wooden seats, box cars, and woodwork in general, washing and scrubbing with brush, and warm two-and-a-half-per-cent. solution of soft soap, and subsequent rubbing dry, reduced the number of bacteria present to less than one per cent. of their original amount. A stream of water from a hose, as also a spray or sprinkled jet of water, did not remove more than seventy per cent. of the bacteria present. Subsequent rubbing cleansed much more effectively. A 1 to 1,000 solution of corrosive sublimate, soaking the wood for four minutes, destroyed nineteen-twentieths of the bacteria, but not the tubercle bacilli. Fresh oil paint applied over an old painted infected wood surface left it sterile.

INFIRMARY SANITATION.

ACCORDING to the *British Medical Journal* St. Albans Infirmary is in the following condition:—"The bedsteads were the miserable 2 feet 3 inch bed with a flock mattress and a proper supply of bedding, but we were pained to see the poor old people, many of whom never leave their bed, condemned to lie on a bed which was almost too narrow to turn round on; one big woman to whom we made this remark said they were most uncomfortable, and more easy to roll out of than to lie in. The bathrooms are on each floor, but from the overcrowded state of the infirmary they were full of a miscellaneous collection of articles, making it evident that they could not be frequently used. They were supplied with hot and cold water, and there was a good flush in the closets. There are no slop sinks, nor did there appear to be any convenience for emptying water except in the closet.

"There is an infectious hospital attached to the Union, at this time empty; it is provided with a disinfecting oven, but here we noticed that the important duty of placing the clothing in the receptacle is entrusted to a pauper. What is the use of having complicated apparatus, when they are rendered useless, or worse than useless, by neglecting to provide a responsible man to see that they are properly worked? Nor was the infectious hospital kept ready for the reception of patients; a nurse would have to be found, a certain amount of lumber to be removed, and the place cleaned up. It is a new building, so perhaps the guardians do not yet understand the use of their possession."

CORRESPONDENCE.

SEWAGE OR FILTH-FED "FISH."

To the Editor of FOOD AND SANITATION.

June, 1894.

SIR,—Bordering on our coast, the sea being contaminated by ever-increasing sewage, outfalls, offensive refuse, and dirty rivers—too often only open drains artificially fouled from source to mouth—may sooner or later cause the extinction of the British trout and British migratory salmon, by stopping their sojourn and spawning in such sewage-spoilt streams.

It was estimated in 1882, that local sewage and refuse had already so polluted and poisoned the rivers of England—reckoned roughly at about 60,000 square miles—that then (1882) upwards of one-sixth of these waters were incapable of supporting fish-life.

On the other hand, like some sea birds, many salt and freshwater "fish" frequent and are fond of a moderate quantity of sewage, whose warmth, products, and contents also favour local aquatic vegetation.

Sewage-fed oysters, besides other aquatic and amphibian animals usually eaten either absolutely raw, or else, insufficiently cleaned and cooked, cause avoidable parasitic diseases, fatal fevers, and poisoning, which details are discussed in my 1893 treatise on "Foul Fish and Filth Fevers," that the United States Fish Commission will shortly publish, and my article on Sewage-fed "Fish" in *Public Health* of June, 1894.

It is imperative that immediately a Royal Commission, a Select Committee, or at least a Parliamentary Return should be granted to inquire into and report upon remedies to diminish the dangers to health and the damage to property, food, and sport, caused by the augmenting sewage pollution of our inland and coastal waters.—I am, sir, yours, etc.,

J. LAWRENCE-HAMILTON, M.R.C.S.

30, Sussex-square, Brighton.

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OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

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Food and Sanitation.

SATURDAY, JUNE 30TH, 1894.

GOVERNMENT ANALYSTS.

AN application to the Courts made this week by a barrister—Mr. Farely—on behalf of a supposed Anarchist that facilities for an independent analysis should be offered by the Crown, raises not only a very important question, but gives point to the demand made by so many analysts that there should be a court of analytical reference consisting of the most capable experts, to whom all cases of disputed analyses should be referred. It is to be regretted that the Crown opposed the application, as such refusal, if sustained, would tend to raise suspicion as to the *bona fides* and the accuracy of the Government analysts' report. The Court was wise, therefore, in overriding the Crown's objection, and ordering the prosecution to afford facilities for an independent analysis, and we only regret that such a proceeding was not adopted in some preceding important trials, such as that of Mrs. Maybrick, for example. It will perhaps be within our readers' recollection that Dr. Stevenson, a Government analyst of the highest reputation, analysed the liver of James Maybrick, and that Mr. Davis—an analyst of high repute—also made an analysis. The results are truly astounding. Mr. Davis's analysis showed 0.13 grains of arsenic, whilst that of Dr. Stevenson showed 0.31 grains, nearly two and a half times as much as Mr. Davis' analysis disclosed. Analysing the liver a second time, Dr. Stevenson found only 0.27 grains. At this time of day it is of course impossible to say which was correct, but had there been an independent analysis then demanded and made, the truth could have been arrived at. No wonder that Drs. Tidy and Rawdon Macnamara ever after spoke of such analyses in tones of withering contempt, and protested that they were not the kind of material on which the liberty or life of even a cat should be sworn away. Errors in chemistry are easily made, and no human being, however able or eminent, can avoid them, and even with Anarchist vermin, the chemical evidence against any person accused should be characteristically English, open to every investigation, and above doubt. An independent court of analytical reference is a necessity, not only for traders prosecuted for adulteration, but for reference in trials for poisoning, offences under the Explosives Acts, and the like. It is a common error to suppose that because a witness is a Government chemist he is infallible. It is only a few months since we analysed a set of milk analyses made by the Inland Revenue chemists and proved them full of mistakes, showing an ignorance that would be inexcusable in the keeper of a country pharmacy. Yet those responsible for the analyses in question pose as eminent scientists, and are adorned with orders of C.B., F.R.S., etc. It is time the whole system of Government analyses was reformed and put on a scientific basis.

TRUE RECIPROCITY! OR HOW TO MAKE HAPPY ENGLISH HOMES.

If all the Smokers of American Manufactured Cigarettes were to smoke our

"SILVER VEIL,"

or other English Brand, employment would be afforded to Thousands of respectable and deserving English Girls, besides a large amount of additional adult labour.

Why support the product of a country which brags of the McKinley Tariff Bill, introduced to devastate English manufactures.

Why not, rather, smoke Cigarettes made out of precisely the same Tobacco, but rolled in English Factories by English Girls, and pay back in its own coin Grab-all Yankeeism.

OGDEN'S FACTORIES, LIVERPOOL.

THINGS IN GENERAL.

WORKHOUSE ABOMINATIONS.

THE revelations in the atrocious case of child torture at Hackney come as a rude shock to the public, who believed that there had been considerable reform in the direction of mere humane treatment on the part of workhouse officials, and it is to be hoped that the Government will institute some inquiry into the management of typical workhouses. It would be found that there are very few in which the grossest of swindles are not practised in the most flagrant manner upon the inmates and the public. In the question of milk, it is only occasionally that samples are taken for analysis of the milk supplied to workhouses, and of samples so taken it is found that something like 90 per cent. are adulterated; in many cases more than half the cream having been abstracted and water also being added.

We do not believe that these things can exist without their being well known to the masters or matrons of the establishments, and we are pretty certain that they are winked at because of an illicit division of the profits thus filched from the paupers. Whenever, therefore, a prosecution is instituted against a contractor for workhouse milk, magistrates should at least take care that smart fines are inflicted. Such, however, is not, unhappily, the case. In a prosecution which occurred at Ennis Petty Sessions recently in connection with milk supplied to the Ennis Workhouse from which 37 per cent. of the cream had been abstracted, Mr. Newton Brady, R.M., and Mr. H. De L. Willis, were satisfied with fining the contractor 2s. 6d. and allowing no costs, which is about as direct an incentive to fraud as could well be given. If this is a fair sample of Irish magisterial wisdom we do not wonder at the mass of the people in that country looking upon the Resident Magistracy as an incapable body, with qualifications beneath contempt.

A SENSIBLE FINE.

IN commendable contrast to the above encouragement of fraud comes the sound common-sense shewn by Sir Reginald Hanson, M.P., sitting as the magistrate at the Guildhall on the 20th. A person of the name of Ginger, of Berton, near Aylesbury, was summoned for sending to the Central Meat Market four pieces of diseased beef. Mr. T. G. Vickery, who prosecuted on behalf of the Commissioners of Sewers, stated that at the beginning of the year Mr. Griffin, a farmer, had a cow that was ill. After treatment, however, it recovered. At the end of last month the animal was found lying in a field, and as it could not get up the defendant, a butcher, was sent for. He became the owner of the animal without payment, slaughtered it, and sent the meat to London. The Aylesbury police, however, communicated with Inspector Leeson, and the meat was seized, brought to that court, and condemned. Inspector Leeson having given evidence,

Dr W. Sedgwick Saunders stated that on the 6th inst. he saw this meat, which was very bad from inflammation. Its condition must have been apparent to the person who slaughtered the beast, as certain portions were cut away. There had been inflamed lung adhesions. Sir Reginald Hanson observed that the defendant did not offer the meat for sale in his own neighbourhood; it was not good enough. Reckless of consequences, he sent it to London. The accused had actually stated, after he had killed the animal, that the flesh would be as yellow as a guinea. He would have to pay a fine of £50 and £3 3s. costs, or in default undergo a month's imprisonment.

If we had more magistrates with Sir Reginald Hanson's firmness and appreciation of the public welfare, the game of poisoning one's fellow creatures by the sale of diseased or rotten meat would not be practised so extensively as it is at present; and yet the above offence is not, after all, as mean as that of plundering that most helpless and pitiable of all creatures, the aged pauper.

"A CHRISTUN DOCTER."

A CORRESPONDENT has sent us a copy of a letter which ought to be of great interest to Mr. W. T. Stead, now that the Mattei Cancer Cure Swindle has done all that it can for him, and that, thanks to our exposure, the dew that *did* fall upon his fleece over the *Daily Paper* had to be returned to those who were foolish enough to send him their money. The letter our correspondent sends appeared in our American contemporary, the *North Western Lancet*, and is as follows:—

"Your copy of the — Jurnal come, and the letter too—askin me to send fifty cens and git it fur a yeer. I don't nead no jurnals. When I git a tuff case I go off inter sum secrit plase and tell the lord all about it and wate for him to put inter my minde what ter do. Thats bettern jurnals and syklopedes and such. If we had more lord trustin docters and less colleges weed fare better. The lord noes morn all the docters and if we go to him fur noledge it ill be bettern jurnals. Fraternally in the lord. A CHRISTUN DOCTER. P. S.—I've practist medisen morn fifty yeers. Yore ken publish this letter if you want ter."

(This "Christun Docter" ought to be even better for Stead's purposes than the mangy sheep-dog which, *vide* Stead's eulogy of the Mattei Cancer Cure Swindle, discovered the wonderful remedy which our analysis proved to be simply dirty water sold at 3s. 9d. for 3 ounces. This "Christun Doctor's" methods are so very Stead-like that we should not be surprised to see him appearing in England under the sacred patronage of the editor of "Fagin's Miscellany" himself).

HULL AND SANITATION.

WE have several times had occasion to refer to the manner in which things are managed in Hull in anything but complimentary terms, and we are not surprised to find that there are persons in Hull who take very strong exception to what is, after all, in the public interest, very necessary criticism. Were the people of Hull alone concerned, they might well be left to stew in their own juice, and suffer for their folly in sanitary and public health matters. But, unfortunately for the people inhabiting the rest of England, Hull is an important seaport, directly connected with continental ports that are liable at any moment to be infected with cholera, and which were, in fact, terribly scourged by cholera only as recently as last year. In the course of our investigations into disinfectants last spring, we discovered that the Corporation of Hull were purchasing carbolic powder alleged to contain 10 per cent. of carbolic, but which, as a matter of fact, contained only some $\frac{2}{3}$ per cent. of phenol. This may suit the Sanitary Committee of that important port, but it certainly ought not to suit the people of Hull.

In our issue of a fortnight ago, in commenting upon the Hull Sanitary Committee, we said they would be better

serving the ratepayers if they had their purchases of carbolic regularly analysed. The *Hull Daily News* of the 20th inst. falls very foul of us for our suggestions and criticisms upon the said Sanitary Committee. We think the *Hull Daily News* editor would be serving those who support his journal very much better if he would take the trouble, before writing upon a matter, to qualify himself for doing so by a little knowledge of the subject. A modicum of intelligence in this case would have saved him from writing some very foolish comments upon the Editor of FOOD AND SANITATION—but then, an intelligent perception of what is really necessary for the well-being of the inhabitants of Hull has never to our knowledge been one of the things which the editor of the *Hull Daily News* could be truthfully accused of possessing.

HOW ADULTERATION IS FOSTERED IN WATERING PLACES.

A LITTLE farce which happened at Lowestoft Police-court on the 19th inst. throws some light upon the methods by which prosecutions for adulteration are made impossible. It is reported in the *East Anglian Daily Times* as follows:—

At the Lowestoft Police-court on Monday, when the Bench was constituted of J. L. Clemence, Esq. (chairman), A. Adams, G. E. Clarke, R. Sayer, and W. R. Jones, the charge-sheet contained the names of two Lowestoft grocers, G. H. Heard and Arthur Jenkerson, summoned for selling adulterated butter at Lowestoft on May 11th. It will be remembered that some discussion took place at the last meeting of the Town Council upon the analyst's report on samples of butter taken from the shops of the defendants, that from Jenkerson's being, it was alleged, adulterated with 10 per cent. of fat other than butter fat, and that from Heard's with 12 per cent. The Sanitary Committee directed the inspector to take proceedings in both cases, but the Council rescinded this, resolving that cautions should be administered. Mr. H. Chamberlin appeared for Jenkerson, but neither of the defendants was present, and the town clerk was also absent.—Mr. Chamberlin said he had wired the town clerk upon the matter, and he had replied that the summonses would be withdrawn. Under the circumstances, he could not offer any objection to that course being pursued, although if the town clerk had been present he should have applied for costs.—The summonses were allowed to be withdrawn.

The sanitary inspector in this case had two samples of the butter analysed, which were returned as containing 10 and 12 per cent. of fat other than butter fat. The butter was from Hamburg, and, as our readers know, we have given something like a score of warnings to grocers not to deal in these butters, the Hamburg factors being, as regards butter swindles, incorrigible. The time limit for prosecutions being so short, the inspector took out summonses against the dealers, but before the case came on for trial the Town Council met and vetoed the prosecutions with the result seen in the above report.

A curious fact in relation to this burking of the prosecutions is that the members of the Town Council are principally tradesmen. This case is worth the attention of the Select Committee of the House of Commons upon Adulteration, which commences to sit on Tuesday next, as being a strong object lesson, showing that inspectors under the Food and Drugs Act should be absolutely free from the control of the local authorities. Just as the jerry-builder or slum property-owner gets on to vestries and local boards for the purposes of making it impossible for the sanitary inspector to interfere with his wretched, rickety structures, or his disease breeding, insanitary property; so are a certain class of tradesmen seeking more and more to become members of town councils, local boards, or vestries, in order that they may stultify the Food and Drugs Act inspector's work, make the Acts a farce, and practise adulteration with profit and impunity.

THE SPIRIT NOTICE QUESTION.

ANOTHER question that should be very plainly put before the Select Committee on Adulteration is that of the barefaced methods by which publicans sell water as spirit. A notice in any position in a public-house that "all spirits are diluted" is usually held to be sufficient to secure the person practising this easy method of gaining extra profit from punishment, though why this robbery of the public should be so permitted is a question difficult to answer. The law lays it down clearly that whiskey shall not be more than 25 u.p. and gin 35 u.p., but when a publican even fails in sheltering his adulteration behind that notice the fine is more often than not an absurdity. Thus at Sutton-on-Trent, a gin slinger, named John Terry, was vending as gin, to his own satisfaction and profit, a substance that contained an extra 39 per cent. of water. At Newark Police-court, Inspector Garforth produced a certificate from the public analyst proving this. Defendant, sworn, said that a notice was hung up in the room where the spirits were sold, stating that water was added. Defendant's wife corroborated. The Bench fined defendant 20s., including costs. With adulteration encouraged by 20s. penalties, Mr. Terry would be the most foolish of business men if he did not continue the profitable practice of selling water at the price of gin. But Newark is not alone in magisterial dunderheads. At Skipton, on September 23rd, before Mr. J. Slingsby and other magistrates, Ann Thompson, innkeeper, of East Marton, near Skipton, was fined 20s. and 27s. 1d. costs for selling Irish whiskey 36 degrees under proof. Inspector A. Randerson proved the case. Any person other than a J.P. would be able to see that such a penalty for selling 11 per cent. of water at the price of whiskey is an incentive to the offender to continue the adulteration. As in the natural course of things each vendor of liquor is only visited once in several years by inspectors under the Acts, the game yields so handsome a profit that a fine of 20s. is a mere fleabite. But, nevertheless, the lady who vended 11 per cent. of water at whiskey price has a grievance, and that one that may well make her feel sore, for had she lived in Retford and come before the Court there she would have had the assistance of the Court itself in burking the Act. Mary Radcliffe, of the Red Lion, Walesby, went, as was shown in the police-court on June 23rd, one better than Ann Thompson, for she sold 14 per cent. of water at the price of gin. Inspector Garforth gave evidence as to the making of the purchase and sending one of the samples to Mr. Otto Hehner, the public analyst of Nottingham. He produced the certificate of Mr. Hehner, which said that the sample contained gin of the lowest legal strength—86 parts; added water, 14 parts.—The Clerk (Mr. H. T. Denman) objected to the certificate, which, he said, was not in proper legal form. A case had recently been decided, in which a public analyst had sent in a certificate as to an analysis of rum, remarking that the sample was not one of genuine rum, and contained an excess of rum over and

above what was allowed by Act of Parliament. It was held that the certificate in such a form was not sufficient evidence upon which to convict the defendant. It was stated that the only duty of the analyst was to certify as to the proportion of water and of rum, leaving the justices to say whether the added water was in excess of that allowed by Act of Parliament. In this case the analyst had done precisely the same thing. He had said that the gin was of the lowest legal strength. It was not for him to say what was the legal strength. It was his duty as an analyst simply to say how many parts of gin and how many parts of water, leaving it to the Bench to say what was the lowest legal strength. The Court upheld the objection, and dismissed the case.

Having given these explanations of how to work the spirit-and-water game, we will leave this nice point and give a little attention to

THE WARRANTY SWINDLE.

It may be prejudice on our part, but if we wish added water in our milk we like to do the adding ourselves. But there is so great an amount of good-nature of the cream-lifting and watering kind about the average milkman and farmer, that he is willing to save us that trouble, and will, in the most generous manner, do the watering himself. Then the Act is so beautifully framed that it is only a numbskull who gets caught. The analysis can be disputed, and Somerset House will be almost sure to differ, or a warranty may be pleaded, or the cows are of the "Lloyd" pattern, and give water instead of the lacteal fluid, or the summons is taken out too late. When there is added to this so clever and genial an advocate as Mr. Ricketts, who can drive a coach-and-four through the Acts, and knows them, perhaps, better than any man in England, it is not surprising that prosecuting Vestries get nasty and expensive tumbles.

For instance, at Kensington Petty Sessions Mr. Handley, whose "warranties" are gaining a reputation, and who has something to do with the Callow Park Dairy Company, was summoned at the instance of the Hammersmith Vestry under the Sale of Food and Drugs Act for selling as milk an article which was not of the nature and substance required.—Mr. Cockburn prosecuted; Mr. Ricketts defended.—Mr. Cockburn urged the Vestry to give this case their very serious attention, and said that when warranties had been obtained, as in this case, it was necessary that it should be proved that the milk had not been tampered with since it had left the cows. Inspector Oakley said that on May 4th he saw William Lancashire in charge of one of the defendant's barrows in Oaklands-road. He purchased from him a pint of new milk, which he divided into three parts for the purpose of having it analysed. Witness paid him three-halfpence for the milk. He had taken it to the public analyst, who found it to contain seven parts of added water. Defendant had been summoned four times for offences of the same nature.—Mr. Ricketts: What

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MILK

CONTAINS PURE MILK, WHEAT AND BARLEY MALT.

NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.

OF ALL CHEMISTS AND STORES.

SAMPLES FREE. 39, SNOW HILL, E.C.

was the result of those four summonses?—Witness: Three were dismissed.—And the fourth?—That is the present one.—You know that when he buys milk he has a warranty.—That is the defence.—But it has always been proved?—Yes, sir.—Mr. Ricketts, addressing the Bench, said that his client never, under any circumstances, bought milk without receiving a written warranty from the vendor. He (defendant) took every means a tradesman could take so that the milk should be pure. He was in a position to show that the milk, which was bought with a warranty, was sold in exactly the same condition as when first received from the farmer. He failed to see why a tradesman should be convicted who took all the precautions he could. The Vestry had their remedy, and could proceed against the farmer for giving a false warranty, and defendant was prepared to give the Vestry all the information he could.—Several witnesses were called in support of the defence, all of whom proved that the milk was not tampered with since it was first received from the farm in Derbyshire.—The Chairman: It is perfectly clear, Mr. Ricketts, that you have proved your case up to the hilt. You have proved that this milk was not tampered with from the time it arrived at the station to the time when it was sold to the customers. Therefore, this case must be dismissed.—Mr. Cockburn applied for a summons against the farmer for giving a false warranty, but the Bench pointed out that this could not be done, as a greater period than 28 days had expired since the offence.

The bearings of the observation we make upon the case lies in the application of it. The "warranty" ought not to be allowed to exist. There is no dispute as to the fact that the milk was adulterated, and that it was so sold, but the warranty enables the vendor to sell it without punishment, and the 28 days' time limit legal stupidity prevents the Vestry prosecuting the warranty giver. The public are injured, the Vestry is defeated in its efforts to protect the inhabitants, and all because the law is "a hass." No wonder milk vendors and retail dealers are very anxious that the invoice should be made a warranty. We commend this object lesson to the

FOOD ADULTERATION COMMITTEE.

But so many things are being commended to this committee, and the Parliamentary machine is so near the period when in mercy to its creaking, jolting uselessness, it must be broken up and sent to the marine store dealer, that we expect little from the committee, even in the way of sittings. A Mr. John Isaac Watts has, however, a few novelties to offer the select of our "gabble house." Mr. John Isaac Watts says that among the articles of commerce vended to the unsuspecting, imitation cheeses hold a prominent place. They are composed of separate milk worked up with fatty substances, and are sometimes imported and sold as English. To meet this imposition Mr. Watts proposes that it should be obligatory to stamp, "in the press," the tops and under sides of all foreign cheeses with the place of origin. Imported butter, in his opinion, should be of a distinctive colour, so that it should not be confounded with "superior Dosset." The colour which he contemplated was a deeper shade of yellow than the primrose tint of the English product—a colour which is sometimes produced with the aid of carrot juice. In the case of eggs, so that a customer might distinguish "Fresh" from "French," and "new-laid Britishers" from foreign "shop'uns," Mr. Watts would have all British ones indelibly stamped, and so on, and so on, which is melancholy mumming, but his own.

ANOTHER SCOTCH BAILLIE.

SOME time ago we began a museum of Scotch baillies, and captured some fine specimens; but its complete furnishing was interrupted by the fact that the Somerest House chemists needed a little top dressing, and that we discovered in the palatial Strand pile even greater curiosities than Scotch burghs offered. However, Scotland stands yet where it did as far as baillies go, and last week

brought us a fine specimen in Baillie House-Hay who appears to have a plentiful stock of Hay seed clinging to him. He said to the Alloa Borough Commissioners that "there apparently was no authoritative standard for milk, but at the same time the following limits might be taken—8·5 per cent. of non-fatty solids and 2·5 per cent. of fat. He presumed that that meant total solids." As the fat of milk averages nearer three and a half per cent. of fat than two and a half, the milk quality of Alloa must be in as poor a condition as the baillee's knowledge.

THE MUSTARD DODGE.

To keep up with scientific adulteration requires that one should indeed be argus-eyed, as the following ingenuous circular headed

MUSTARD COLOURING

proves:—

"This colouring is *tasteless, inodorous, and harmless*: it has been introduced for the purpose of *bringing up the colour of genuine mustards and condiments of inferior appearance*, to that of the finest qualities.

"The colouring is so strong in effect that $\frac{1}{2}$ per cent. is usually more than *sufficient* to have the desired effect—even upon the commonest qualities, and the mustard is *not in any way injured in taste, smell, or in any other way*.

"Samples and particulars of use to be obtained of the Sole Importers, Ehrenfest and Co., 56, Stamford-street, Blackfriars, London, S.E."

We make no apologies to our readers for bringing this interesting mustard revelation to their notice, nor do we grudge Messrs. Ehrenfest and Co. whatever benefits our free advertisement may give them. As Mr. Colman, M.P.—himself a very large mustard manufacturer—is a member of the Select Committee of the House of Commons, which will sit on Tuesday to inquire into adulteration, this circular may interest him. We are making a careful analysis of the substance in question, and will shortly, for the benefit of our readers, publish the same.

TEA ADULTERATION.

THANKS to the wise regulation by which teas are analysed by the Customs Department, tea adulteration has been practically made impossible in England. It is not so, however, in Sydney. According to our go-ahead contemporary, the *Westminster Gazette*, at a recent sitting of the local Parliament one of the members, Mr. Neild, "drew from his coat-tail pocket a sample of tea, and handed the same to Sir George Dibbs for the edification of the authorities." Ten days later the Premier assured the Assembly, upon the authority of the Government analyst, that the tea contained "distinct traces of lead and antimony, to say nothing of wooden chips and shavings, and was, in fact, quite unfit for consumption."

The sample, it appears, came from a bulk shipment of nearly a thousand chests, most of which had found its way into the "festive teapot" before the Parliamentary exposure. The lead discovered by the analyst has been described by a Sydney merchant as "colouring matter," and he says that if you picked out from the tea a piece of stalk you could write your name with it, almost as though you had a blacklead pencil in your hand. It seems that the common plan of colouring on the plantations is to "involve an infusion of lamp-black into the leaves, or else churn the leaves along with lumps of black lead in a revolving barrel." A great deal of this mixture is, we learn, landed in Sydney every year. Does any of it ever reach London?

The *Westminster's* inquiry if any of this reaches London is answered by the fact that we are protected from such adulterations by the Customs chemist's examinations of all imported teas. There is, however, a swindle practised with teas which we exposed some time ago, and which is still being carried on by some of the largest of the much-advertised packet tea firms, who use a "tea-faking" machine. The large refreshment caterers

and hotels have a great quantity of exhausted tea leaves. These, on being dried and passed through the "tea-faking" machine, can be, and are, made to have the appearance of the finest teas, and when mixed off in moderate proportions with genuine tea may be sold to the public without any risk of detection. It is only a few months since an offer was made to the Aerated Bread Co., by a gang of persons anxious to further develop and exploit this swindle, to collect the waste leaves at a certain price from the whole of this company's establishments. We understand, however, the offer was declined. The company would not lend itself to any such practices, and it is a pity that a similar high sense of honour does not afflict some of the largest packet tea firms who have been lately freely indulging in this swindle.

CHEAP ICE-CREAMS.

Now that a spell of fine weather has set in, the peripatetic ice-cream man is doing a roaring trade. It would be just as well, however, if inspectors in various towns would take a few samples of these ice-creams and cause them to be analysed. Analyses made of ice-creams in Islington and Clerkenwell, purchased at random from street-corner Italian vendors, showed some to consist of boiled cornflour, water, tartaric acid, and sugar, coloured with anniline red, and to have traces of lead and antimony. One sample was frozen water flavoured with essence of lemon; harmless enough in itself, but, like the workhouse milk, rather deficient in cream. Another sample was found under microscopical analysis to contain four lice, with some coloured hairs. In the course of the investigations, a little girl, whose face and hands were covered with sores, was seen licking a glass out in what there is too much reason to believe is a very common fashion with those who purchase this delicacy from the itinerant vendors. After this licking, however, the Italian did not even take the trouble to wash the glass, but merely wiped it and filled it again with ice-cream for another customer.

POISONING BY TINNED AND OTHER MEATS.

Of those who pursue this villainous trade of palming off diseased meat upon the public, not a tithe receive punishment, the bulk of them being far wiser than Mr. Henry Ginger, and choosing safer channels by which to dispose of their slink or other produce. It is only a few months since a number of persons in various parts of the country were poisoned by pork pies, and but last week that some 20 persons living at Crossflats, near Keighley, were poisoned by eating potted meat, and narrowly escaped losing their lives. Most of them were attacked with vomiting and cramp whilst at their work in the mills, and suffered such violent agony that they had to be carried from their work to their respective homes. Yet the trade in doctored sausages and potted meats, pies, and tinned trash goes merrily on, and is practically un-

interfered with. There is no real inspection of tinned meats, and there is no true record kept of the poisonings caused by their use. If there were, the public would be astounded at the frightful holocaust.

WONDROUS FUTURE OF ELECTRICAL SCIENCE.

THE astounding discoveries of the young Servian genius, Nikola Tesla, are so novel and so extraordinary that the most imaginative of inventors are unable to foresee what form their development will take. Mr. Tesla shows us the electric fluid under conditions in which it differs from ordinary electricity as much as light differs from heat. A current of 2,000 volts will kill a man in the twinkling of an eye, but Tesla lets currents pour through his hands with a potential of 200,000 volts vibrating a million times a second, and showering from him in dazzling streams of light. Mr. Tesla says that he will soon be able to wrap himself in a complete sheet of electrical fire that will keep a man warm at the North Pole without harming him. Equally astounding, and with more visible usefulness, is Mr. Tesla's discovery that currents of such enormous potential and frequency, can be transmitted without the use of wires. A room can be filled with electricity from copper plates in ceiling and floor, so that electric lamps will burn without any connecting wire as soon as they are brought in. In the same way intelligence and power may be transmitted without a wire circuit, doing away with the necessity for trolleys, storage batteries and subways. No one can read the account of the Researches and Writings of Nikola Tesla, by Thomas Commerford Martin, just published by *The Electrical Engineer*, of New York, without feeling that a new era is dawning in electrical science. This sudden enlargement of the idea of scientific men, in regard to the nature and the possibilities of electricity, has led the *New York Mail and Express* to bring together in a symposium the opinions of well-known electricians as to the future development of electrical science. Mr. Edison thinks we shall yet be able to get electricity direct from coal, a discovery compared with which the philosopher's stone is a mere bauble. Then our steamships will need only "a snug little bin for 250 tons of coal, instead of one for 2,800 tons." Successful aerial flight, electric cookery, a transatlantic telephone, a real telescope with which one can see around the world by the medium of a wire, the formation of wholesome food products under the potency of electrical affinities—these are some of the things which imaginative inventors foresee. Most startling of all, though it was suggested nearly ten years ago by an undergraduate in a western college, is Mr. Edison's idea that unspoken thought may be recorded by electrical apparatus applied to the cranium, and either reproduced at pleasure or transmitted to another person.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(C. T. KINGZETT, F.I.C., F.C.S., Managing Director)

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IRISH BUTTER.

By T. G. PERRY, Esq., BELFAST.

IRELAND possesses the finest climate and pasture in the world for dairy-farming. Its mild temperature and humid atmosphere, and its insular position, have enabled Ireland to raise more human food on an average of years than any other country in proportion to the area cultivated. Ireland can and has beaten the world in making butter in every case where she has adopted scientific principles. I do not pretend to make you believe that all Irish butter is turned out of so excellent a quality. This is just where the rub comes in. I calculate that only about 30 per cent. of Irish butter is turned out of the proper standard and quality. Here comes in the cause how Danish butter has been so largely ousting the Irish butter. To a large extent, Ireland has been standing still, while Denmark, for years, has been forging ahead, making her dairy-farming system, by the aid of Government support, as near perfection as possible. Now, the only thing to recommend in Danish butter is its uniformity as regards colour, salt, and general appearance, but, as to its substance, I unhesitatingly assert that Danish butter is not to be compared with Irish, if the latter be tolerably fresh and sweet; for, while it pleases fairly well on the table for a while, its continued use seems to implant a craving for a bit of good Irish; and I consider twelve ounces of Irish butter equal in constituents to one pound of Danish. Had we in Ireland been wise in time, a large share of the British money—(£13,000,000)—now going annually for foreign butter would be at present coming to Ireland. Taking the total of our annual exports to Great Britain at about £7,000,000, and, adding amount retained for home wants, I reckon one and a half millions more money can be put in the pockets of the butter-makers of Ireland, upon the same quantity as at present turned out, by bringing it up to the proper standard. I also affirm that £3,000,000 worth more butter can be annually produced in Ireland for the British market. With great Britain importing upwards of £20,000,000 in butter each year, and the amount always increasing, Ireland should be sending forward the half of this, at least. It can, and must, be done, and the first step in that direction is improvement in quality. I have no sympathy with the plea set up at the late prosecution in Manchester, over water in Irish butter, that it was necessary to allow a wide margin for water, in order that the poor should not be deprived of cheap, low-class Irish butter. It takes as much of our butter resources to turn out a pound of butter which makes 9d. as a lb. that commands 1s., and it is certainly not good enough for the best climate and pasture country to take a back seat in this way. In February last I applied the water-test to five samples of butter, four of these being from different parts of Ireland, and one being Danish, the average being 15.2. The samples thus tested being above the average quality, I would say that, to avoid prosecution, and allowing for contingencies in temperature, and while still believing in 15 per cent. as the point to aim at, a standard of 18 per cent. would cover all the ground, as, after years of experience in the trade, I believe butter carrying moisture beyond this rate is neither beneficial for the consumer, nor profitable to the retailer. Let us face the fact that the time has gone for making store butter to lie over for winter use. I do not dread Denmark. That country has touched us nearly as much as they can. I look to Australia and New Zealand as our most dangerous rivals. Some years ago a small experiment was tried in shipping butter to Great Britain, and the season just closed shows a record of 462,931 packages of butter received in London, being, in weight, as follows:—Australia, 8,744 tons; New Zealand, 3,010 tons; total, 11,754 tons. Canada will also be contributing her supplies, as she has already been doing with cheese; and when we look at these facts we at once conclude there is no longer room for Ireland continuing in the race, except by turning out the very best butter possible, and disposing of it daily in its freshest condition as produced, and projecting the system over the whole year as equally as possible, in order to avoid the usual glut in summer time. Having expressed his opinion that cream butter will be the butter of the future, and that nothing but this, or some system approach it, would save the industry, Mr. Perry asserted that the unskilful, filthy, and slovenly treatment to which Irish milk is too often subjected at the present time has, and rightly so, a tendency to discredit Irish-made butter in the markets of the world, and to destroy one of the few remaining agricultural industries which, under different conditions, would still prove remunerative to the small farmers of Ireland. Let creameries be adopted or not, there must come an improved system, be it what it may, together with technical education and dairy schools under Government support, to save this national industry before it departs and goes hence.

SOUTHAMPTON AND THE FOOD AND DRUGS ACTS.

AMONGST the boroughs in which the Food and Drugs Acts may be really said to be well-enforced, and the health of the inhabitants carefully looked after, may now be classed Southampton. Three years ago the number of samples taken per annum were 47 to 56, but since the appointment of Dr. Wellesley Harris to be medical officer there has been a very energetic change for the better, 145 samples having been taken last year for a population of some 67,000. They included 59 samples of milk, 27 of butter, 11 of lard, 26 of coffee, 8 spirits, 6 vinegar, 1 lemonade, 2 olive oil, 2 arrowroot, and 3 drugs; 11 per cent of these were adulterated. Meat inspection is also a matter to which careful attention is given, especially on those evenings when there is the greatest likelihood of unsound food being offered to the inhabitants.

In a very well arranged and valuable report, Dr. Harris says of phthisis:

"PHTHISIS.—This disease was the cause of 102 deaths. The malady is greatly influenced by the sanitary surroundings of the patient, and the ability, or otherwise, to obtain proper nourishment. Consequently it is more common in crowded damp and badly ventilated districts, and among the poor. The effect of these conditions will be proved on referring to the Street Lists of Disease, given in this report, in which it is shown that the mortality from phthisis occurs chiefly in those insanitary neighbourhoods which I have had occasion to bring under the notice of the authority in a report on the Housing of the Working Classes.

It cannot be too widely known that phthisis is infectious, but the danger of spreading the disease may, by simple rules (given below) on the part of the sufferer, be minimised to almost *nil*. The material containing the infective bacilli (or germs) is the expectoration of the patient, this, especially amongst those of dirty habits, is ejected on the floors of their dwelling rooms, in public vehicles, such as trains, or, with more particular persons, into rags or handkerchiefs.

This material dries and powders up, and is distributed as dust, which is inhaled by other persons. The germs finding a suitable soil, develop and reproduce the disease, and that almost entirely through the carelessness of those persons who already are unfortunately suffering from it. Spit cups, containing an efficient antiseptic, should be used indoors, and pocket spit flasks containing similar material are made sufficiently small to be carried in the pocket for outdoor use. All rags, handkerchiefs, or cloth, if used to receive expectoration, should be afterwards burnt, and the habit of spitting on floors, either in private or public places, cannot be too quickly discontinued. The importance of these facts are being well recognised, and I am correct, I think, in stating that the head of a Government department has issued instructions that any of the employés suffering from phthisis shall carry out a series of precautions, laid down somewhat on the lines I have above referred to, in the interests of their own friends, and of the public generally.

Phthisis is generally a slow, lingering disease, and 102 deaths being registered shows that the total number of persons suffering is great, and this shows the greater necessity there is for such rules as I have spoken of above being followed."

Those who have had experience of the great public usefulness, as well as cleanliness, of the underground urinals which have recently been erected in London, will recognise at once the wisdom of the following suggestion which Dr. Harris makes to the Town Council:

"URINALS.—I desire to call the attention of the Town Council to the urgent necessity which exists for improvement in this direction. Southampton is very badly off in this respect, and as a consequence nuisances are committed in all narrow lanes and courts leading off main thoroughfares. Several of the old form of urinals similar to the one in the Back of the Walls and Bridge Street should be removed, and underground urinals and closets erected at various parts of the Town where a number of streets meet."

Altogether Southampton is to be congratulated on possessing a medical officer of health so capable and so thoroughly abreast of the spirit of the time.

Mr. B. SCOTT ELDER, chief inspector of food and drugs for the county of Durham, has accepted the invitation of the Sanitary Institute to read a paper on the Food and Drugs Acts, at the Sanitary Congress to be held at Liverpool in September.

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ABERDEENSHIRE BREAD AND WATER.

DR. WATT, the medical officer for the county of Aberdeen, in his annual report, states that he caused 36 waters to be analysed by Mr. Jones, F.I.C., who found that 18 were bad, 13 suspicious or unsatisfactory, two were fair, two good, one excellent. He states that too great carelessness has hitherto been displayed in rural districts in the collection and protection of water supplies, and asks for speedy reform in this essential need of life. He inspected 40 bakehouses during the year; 27 were satisfactory, 13 were faulty generally in respect of cleanliness, ventilation, and cubic space. He found children employed in some, and at once notified the factory inspector of the district. No women were employed in any of the bakehouses of the county. This lack of cleanliness in the bakehouses of Aberdeenshire does not reflect much credit on those who supply the staff of life to their customers, and a speedy adoption of the Food and Drugs Act is suggested by the medical officer.

THE HYGIENIC ADVANTAGES OF NEW BREAD.

NEW bread and the hot morning roll have been condemned as injurious and difficult of digestion. However true this charge may be the use of new bread appears, even from the hygienic point of view, to have some compensating advantages. The *British Medical Journal* states that:—Dr. Troitzki, writing in the Russian medical periodical *Vratch*, states that he has found that new and uncut bread contains no micro-organisms, as the heat necessary to bake the bread is sufficient to kill them all. As soon, however, as the bread is cut and is allowed to lie about uncovered not only harmless but also pathogenic microbes find in it an excellent nutrient medium. White or wheatmeal bread is a better medium than black or rye bread, as the latter contains a greater percentage of acidity. Dr. Troitzki's experiments with pathogenic bacteria gave the following results: *Streptococcus pyogenes aureus* retains its vitality on the crumb of wheatmeal bread for twenty-eight to thirty-one days, on the crust for twenty to twenty-three days; the bacillus of anthrax (without spores) remains alive on the crumb for thirty to thirty-seven days, and on the crust for thirty-one to thirty-three days; the typhoid bacillus remains active twenty-five to thirty days on the crumb, and twenty-six to twenty-eight on the crust; whilst the bacillus of cholera lives twenty-three to twenty-five or twenty-seven days on both. Of special interest is the fact that if the bread is placed before the experiment for fifteen minutes in the disinfecting oven (at a temperature of 115 deg. C.) all the above-named pathogenic bacteria retain their vitality for several (four to eight) days longer. The author explains this fact by the acidity of the bread being lessened by the heat and the bread becoming a better nutrient medium.

THE SWANSEA AUTHORITIES AND DR. W. MORGAN.

THE Swansea authorities have made an unsuccessful effort to remove their analyst, Dr. W. Morgan. They pay him £150 per annum with 6s. 8d. per sample for all analyses above 350 under the Food and Drugs Act, and £50 per annum for analyses of water and petroleum and gas-testing. They considered this salary excessive, and therefore asked the Local Government Board to remove the officer with a view to a re-appointment at a lower salary. Dr. Morgan wrote that he considered the action of the County Council very unfair, especially after nearly twenty years' service, and he asked the Local Government Board to obtain from the Council a statement of the alteration of terms they proposed to make, observing that he should be content to leave it to them to decide whether such terms are reasonable or not. Replying to this letter, the Swansea Town Clerk said the Council had no desire to dispense with the analyst's services; but they are of opinion that the duties of that office might and ought to be readjusted so as to ensure a more thorough enforcement of the provisions of the Food Adulteration Acts than at present exists. According to the existing conditions, the only samples submitted for analysis are those collected by the inspectors appointed for that purpose. The Council, however, think that every burgess should have the right of submitting articles of food or any drug to the analyst for analysis, the analyst being paid for such services according to a fixed scale of charges to be hereafter determined. If this course were adopted, the Council believe that many cases of adulteration, now undetected, might be discovered, and afterwards dealt with. The Local Government Board, in reply, suggested that the Swansea Council should, in the first instance, inform Dr. Morgan of their proposals, and afford him an opportunity of considering them. At present the Board are of opinion that no sufficient ground has been shown for the removal of Dr. Morgan from his office.

AN IMPORTANT WHITE-LEAD ADULTERATION CASE. THE VALUE OF ANALYSIS.

AN action of great importance was decided, on May 28th, in the American Law Courts at Cincinnati. The suit has been very lengthy, and the evidence most voluminous. The depositions of certain witnesses created considerable sensation. It appears that in August, 1891, the Walker Paint Company brought suit against the Anchor White Lead Company, and the Eckstein White Lead Company, claiming that the defendants were issuing false analyses of the plaintiff's goods; that the plaintiff did not use barytes in its so-called strictly pure oxidised white lead, and never did;

and that the defendants were issuing circulars containing analyses by chemists, which showed the goods of the plaintiffs to be adulterated with barytes. The action was for injunction, and for £10,000 damages. The defendants admitted that they had published the analyses complained of, and their principal ground of defence was that the statements contained in the analyses were true, and the plaintiffs as manufacturers of white lead, under their different brands, had during the years 1889 and 1890, notwithstanding their statements to the contrary, used barytes as an adulterant. The defendants further claimed that having had numerous analyses made of the product of the plaintiff, all of which showed the presence of this adulterant, they were justified in publishing these analyses for the purpose of informing the trade and the public generally of the fact that the plaintiff's goods were adulterated. Nearly 50 different analyses were introduced in evidence on both sides, and in those made of goods manufactured prior to August, 1891, the presence of barytes as an adulterant was almost invariably shown. The plaintiff attempted to establish, by the testimony of officers and three employes, that no adulterant had ever been put in the goods; but the Court found that the analyses showed conclusively that such was not the fact. The Court also found that the claim of the plaintiff that the defendants tampered with or caused to be adulterated any of the kegs of the plaintiffs' goods, was wholly unfounded and unsupported by any evidence worthy of belief. The Court further found that the testimony of Alex. Matthews was entitled to no credit whatever, and that the testimony of William B. Burke was as deliberate a case of perjury as has ever been attempted in a Court. In giving judgment, Judge Smith said: "In conclusion, my finding is that by a clear preponderance of the evidence, the defendants have established, and to my mind beyond all reasonable doubt they have proven, that during the years 1889 and 1890, when the analyses complained of in the petition were made, the plaintiffs were sending out goods as first-class which were adulterated with barytes; that the analyses complained of in the petition were true, and that the petition should be dismissed upon that ground. It is therefore unnecessary that I should consider the other defences made by the defendants." Judgment accordingly.

WHISKEY REVELATIONS.

MR. J. O'CONNOR asked the Chancellor of the Exchequer whether he could say, with reference to the recent falsification of permits by Messrs. Dunville and Co., Belfast, what was the number of cases in which falsification was discovered, what was the maximum penalty for each offence, and what was the amount of the fine paid; and whether he could also say what was the real age of the whiskey, and what was the age as stated by Messrs. Dunville on the falsified permits. The Chancellor of the Exchequer: The number of cases discovered was 26. The maximum penalty for each is £550. This figure may, however, be taken as representing the total sum that would have been given if the case had been taken into Court. The fine paid was £500. I am unable to say what was the real age of the whiskey. No age was stated by Messrs. Dunville on the permits in question. The number altered or obliterated does not purport to represent the age of the whiskey, but the year of the last operation on it in the warehouse, that is to say, blending or racking. There was no fraud upon or loss to the Revenue.

A SUBSTITUTE FOR COFFEE.

THE above is the title of a bulletin issued by Purdue University Agricultural Experiment station, the purpose of which is to direct attention to an easily available substitute, capable of being grown without special care in northern latitudes of the United States, viz.: the Soy or Soja bean (*soja hispida*). This is a Japanese plant of upright, stiff, bushy form, attaining, under favourable circumstances, a height of three feet. There are three large leaves on a leaf stem, from the axils of which come short flower shoots, producing at maturity pods in clusters of two and three. Each pod contains from two to four seeds, a little longer than broad, being about three-eighths of an inch in length. The plant sends a vigorous root down into the soil, and the leaves, stem, and pods are, as a rule, very hairy. One planter of these beans reports an exceptional yield of 782 beans on one stalk, and sixteen bushels upon an acre. An analysis of the bean, made by Prof. Huston, in the College laboratory, showed the following as its constituents: Moisture, 6.36; fat, 18.34; protein, 32.93; fibre, 5.50; ash, 5.81; carbohydrates, 31.06; total nitrogen, 5.27; albuminoid nitrogen, 5.13; real albumenoids, 32.10. Soy beans lack the alkaloid, caffeine, which gives to coffee its characteristic taste and physiological action, but they contain, according to Stingl, and Morawski, a ferment said to be one of the most powerful known in its action upon starch, two-thirds of which it converts into sugar, and one-third into dextrin. The amount of starch present in the beans is so little that bread made from them has been recommended in diabetes. Soy beans are not suggested as a substitute for coffee in the sense that the peculiar flavour or action of its alkaloid can be imitated, but those who have tried them aver that a drink made from them is much more enjoyable than a great deal of the so-called coffee served in some hotels and restaurants, and that the flavour is much more agreeable than that of the usual coffee substitutes, such as roasted rye, barley, carrots, chicory, or wheat bran.

CORRESPONDENCE.

SWEET MILK STANDARD.

To the Editor of FOOD AND SANITATION.

June 26th, 1894.

DEAR SIR,—I do not consider that the proposal of "The Dairy Trade and Can Protection Society" to have the word "milk" wherever used in the Acts regulating the sale of milk to mean "pure, whole, new milk only," is a wise proposal. Such a provision would impose a very arbitrary limitation upon the freedom which it is desirable dairymen should enjoy, in common with other tradesmen, in catering for the public, according to the wants and wishes of their customers. It is quite sufficient that a fairly just minimum standard for "sweet milk" should be maintained, and that this standard should apply to pure, whole, new milk—or, in other words, "sweet milk" only, but, it would be both absurd and impracticable to limit the definition of the term "milk" to this commodity alone. Every dairymen should be in a position, legally, to supply his customers with whole, new milk if they want it and will pay the price for it, and in all cases it should be held to be a fraud involving a penalty under the Acts for any dairymen to supply, as such, a mixed and inferior article. But nothing in the Acts should prevent such reasonable variety of quality under the term "milk" being supplied to the public as the public may demand. There is no reason, therefore, why the standard properly applicable to pure, whole, new milk should not in the Acts still be designated, as it has always been, "sweet milk," without restricting the definition of the word "milk."

It must be borne in mind that in every large community there are varieties of classes of the public who demand different qualities and prices of milk. There are the rich, and people with small families, who as a rule prefer and demand sweet milk of the best quality, and are willing to pay the price for the same. It suits well, also, with the domestic economy of certain families, who cream the milk they purchase in the morning for tea in the afternoon, to demand and pay for the very best class of sweet milk. There are the poorer classes, and householders with large families, who wish, in milk as in other things, a maximum of quantity at a minimum of cost, and who are content with a fair average quality for use as they buy it, but who will not pay the price of the best. There are special economies in the matter of boarders on a large scale, and of servants, institutions, and such like, where fair average quality is good enough, and a moderate price is a *sine quâ non*. This holds good both with milk and cream, so far as the public demand is concerned. A gradation of qualities is demanded at a corresponding gradation of prices. And this is the way of the public in general consumption with every other commodity. Retail shopkeepers in every other trade, by experience, as a consequence are in the habit of providing a variety of classes and qualities varying proportionately in price to suit the requirements of their customers—those consumers who are willing to pay the highest price always being able to command the best and freshest and rarest article. It is very desirable that dairymen should be enabled, so far as the laws regulating their trade are concerned, to pursue their business with as much security from disturbance as other tradesmen are in theirs. The proposal of the society referred to—that the word "milk" in Acts regulating the trade should always mean pure, whole, new milk only—would, if carried into effect, add a host of difficulties and embarrassments to the lives of honest men in conducting business in competition with reckless and less scrupulous rivals in trade.

There is great danger to the lieges in over-legislating, and especially is this the case in trade matters. The fewer and the more general the laws are the better, provided they are adequate to the great end of being a terror to evil-doers only, and a praise and protection to those that do well. Any multiplicity of restrictions beyond this necessity must harass the law-abiding, and create advantage for the skilful and unscrupulous evaders of the law. The great bulk of business people, and especially responsible managers, will be guided by the law, and will never knowingly infringe its provisions. They will mostly keep on the safe side of its prohibitions and penalties. But a certain number of traders will on that very account systematically discount these risks the others so carefully avoid, and thereby capture a competitive advantage out of the caution and correctness of the rest.

Every additional unnecessary restriction is a further premium upon this "pirate class" of tradesmen who satisfy public demand all the more easily and profitably on account of the immunity they appropriate to themselves from the vexatious restrictions which the more scrupulous traders reluctantly respect. In the case we are presently considering, who is to tell whether any given milk offered for sale (and which comes up to the proposed reduced standard) is pure, whole, new milk, or whether it is mixed and manipulated? The only test will be the standard, and any satisfactory analysis can only presume that the milk which agrees in its chemical proportions with the standard is pure, whole, new milk; and yet, without any means of determining this certainty, the Act is to require that the substance dealt with under

the term "milk" must be pure, whole, new milk. The result would be that those dealers who would evade the law—relying upon the degraded standard—would have a pull over those who respected the law and who adhered strictly to its terms and conditions.

It is in a somewhat similar way that much of our factory, sanitary, and food legislation, however excellent in its aim, inflicts great injury upon the law-abiding home producers by offering openings and inducements in our markets to production and trade from foreign areas, where there is no such supervision and no similar laws to what we have in Britain. Middlemen, also, interested in the foreign trade are mightily protected the more vigilantly and effectively the home producer is restricted and harassed by penal laws and regulations. The system at once invites smuggling and brigandage of this sort, and really looks like as if it had been devised with such an ulterior motive in view. It is very manifest that any laws necessary for regulating trade should be absolutely certain and effective equally on all operating in the market, and in order to their being so, they should be certain and comprehensive in their operation, and simple and just in their nature. If law exists in such multiplicity, complexity, and artificiality as to invite wide outlets for evasion, then a positive injury is inflicted upon those who do well, and it ceases to be a terror to those who do evil. In the matter of milk, if the law-defying dealer finds a ready market and public appreciation for an inferior quality because of comparative cheapness, then the most effective check upon this traffic is to free the hand of the honest dealer so that he also may be able to offer the same commodity at the same price, in addition to the sterling article which he offers for sale according to the statute and the standard. He should be able, so far as the law is concerned, to say to the public, "Here is pure, whole, new milk which I sell according to the statute and the standard, and for which I charge you so much per pint; and here is a cheaper milk at so much less per pint, which I do not so guarantee, but which is equal to any other at that price in the market." This liberty, as I have already said, would place the vendors of milk in the same reasonable position of security as other merchants are in honestly conducting their business according to public requirements.

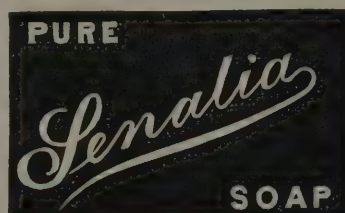
I have only to add that it is in my opinion undesirable in any case to make the official and legal standard, upon which prosecutions should be based, so low as that recommended by the society referred to. The present minimum standard is reasonably just as an all-the-year-round standard. To lower it because some abnormal cases occur in which an abnormally low percentage of fat and other solids is yielded in the milk as it comes from the cow would, in my opinion, be injurious to those producers who, by proper attention and outlay on their herds in the matter of feeding and care, keep up to a maximum which is much beyond the present standard. Abnormal conditions seldom apply to herds without culpability on the farmer's part. The legal standard, therefore, while it should not be too high, should yet be high enough to discourage and deter from illegitimate operations, such as the mixing of sweet milk with water or with separated milk, or the feeding of cows on brewers' grains, draff, or other watery trash to produce quantity at the expense of quality. There really, however, can be no satisfactory formula or legislation on the subject till the analysts, the farmers, and the dairymen come more closely and frequently together in mutual aid to devise, as they are best fitted to do, those legal conditions which will best secure the public well-being, as well as the honour of the trade. This would also make the work of our local sanitary authorities and health committees much more agreeable and easy than it can possibly be under present circumstances, and would relieve even the Bench of much occasion for doubt and hesitation in cases of prosecution through dubieties which at present arise from time to time.—I am, yours truly,

ALEXANDER LEITH,
Secretary and Manager.

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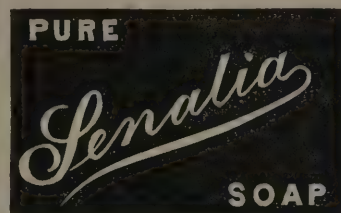
SATURDAY, JULY 7TH, 1894.

THE GOVERNMENT CHEMICAL DEPARTMENT.

If the castigations we have, in the public interest, felt it necessary to administer to the pseudo-chemical department at Somerset House, that poses as a court of reference for which it has not one atom of fitness, needed any further justification, it could be found in the vinegar trade prosecution, reported in another column. The Somerset House chemists had a plain question addressed to them, namely, was Mr. Allen's analysis of the vinegar accurate or inaccurate? This question they either would not or could not answer, but furnished a certificate of that exasperating character for which Somerset House is notorious. In the hands of a less able advocate than the Sheffield Deputy Town Clerk their ridiculous certificate might well have led to the case being dismissed. Its stupidity is just of the character that invites an appeal against a conviction, and we should not be surprised to see this Somerset House ignorance costing the Sheffield authorities a considerable amount of money. Should the case go to appeal we trust that means will be adopted to put the chemists of this Government Department in the box, and that they will be rigorously examined upon their methods of analysis.

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43, Cannon Street, London.**

Our whole system of Government analysis is, as we have repeatedly pointed out, in a state that offers neither to the public nor to the traders any security whatever. It would be, of course, manifestly unfair to Dr. Dupré to class him with the Somerset House gang, as all who know his sterling worth as a man and his capacity as a scientist will admit; but it is neither fair to the public nor creditable to the Government that chemical evidence, absolutely unsupported, and with practically no body of experts to attest its accuracy or otherwise, should have been offered, as was the case in the trial of the alleged anarchist on Wednesday. Upon the one side there was Dr. Dupré explicitly stating that the substances found by the police were of a highly explosive character; on the other side there was Dr. Teed, a public analyst of the highest reputation and attainments, brushing aside, as unworthy of chemical notice, the evidence adduced by the Crown and stating that the alleged highly explosive substances were "mere rubbish," the sweepings of a student's laboratory.

It is surely time that incidents such as these that have occurred during the past week should be made impossible. As we have repeatedly proved, a society for scientific research, with a body of real experts as a court of reference, in cases affecting adulteration, etc., would not only be a safeguard for the public, but would save the English people millions of money per year. To take as an example the question of butter; it would not pay any capable analyst to make independent investigations with this article. It is nobody's business to persistently study butter analysis and devise means of detecting minute percentages, say of 5 or 10 per cent. of foreign fats. There is every reason to believe that there is not one ounce of really genuine butter comes from the Continent, and that every pound of the so-called pure butter contains at least 5 per cent. and often more, of margarine. This enables the foreigners to undersell our native butter producers, and it is practically a plunder of the English public of some thousands of pounds per week. It is the same with nearly every article of food. Ingenious works-chemists are ever engaged in perfecting new swindles for the large manufactures of food stuffs, and the price the English public pay for this absence of accurate chemical knowledge and supervision amounts to many millions of pounds yearly. If the wretched fiascos above alluded to do not lead to the creation of a really expert court of reference in chemical matters, we must consider that it is impossible to open the eyes of the authorities.

THINGS IN GENERAL.

THE MYSTERY OF A PEPPERMINT LOZENGE.

EVERY day brings us fresh cause for wonder at the marvellous resources of the gentry who make adulteration a fine art. One of the greatest annoyances of railway travelling is the giggling miss or the vinegar-faced spinster sucking industriously at the potent-smelling peppermint drop.

A Lincoln manufacturer appears to have championed the cause of those who consider the peppermint lozenge a nuisance. On June 27th, Willen Sharp, grocer, Donington, was charged with having sold peppermint lozenges adulterated with raw potato starch. There were two summonses, the first charging the defendant with having adulterated the lozenges as an article of food, and the second charging him with having adulterated the lozenges as a drug, so as to injuriously affect its quality and potency.—Mr. H. Snaith defended.—Superintendent Crawford proved the purchase of the lozenges, and Mr. C. H. Southwell, the county analyst, said that the lozenges contained not less than 10 per cent. of raw potato starch. The lozenges of the British Pharmacopœia consisted of sugar, gum acacia, and the medicinal substance they represented. The use of starch would increase the bulk, weight, and the profit, and would take the place of much of the gum acacia. Gum acacia was worth from 1s. 6d. to 5s. per lb., and potato starch was worth less than 1½d. per lb. Raw starch was considered injurious, as tending to induce or to aggravate dyspepsia.—Dr. Pilcher also gave evidence in support of the charge, and said that raw potato starch was injurious to health, and would have a depreciating effect on any drug with which it was combined.—On behalf of the defendant, Mr. Snaith said he retailed the lozenges as they were supplied to him, and he was ignorant as to what they contained.—Defendant said he had never had any complaint about the lozenges; and, on being pressed, stated that he purchased them from Mr. Poppleton, of Lincoln.—The magistrates dismissed the case, on the ground that the defendant had acted in ignorance, but cautioned him against selling similar lozenges in the future.

There may, however, be those who are prepared to say a good word for the peppermint drop, and they will learn with a feeling of alarm that its supposed potency against "spassums" is thus tampered with, and that dire dyspepsia lurks in this sweetmeat.

SPENT GINGER PRECEPT AND PRACTICE.

SOME four months ago the following very strong letter respecting spent ginger was sent to the principal grocers' papers:—
February 2nd.

Sir,—Our attention has been directed to a letter in last Saturday's *Grocer*, from Messrs. Drysdale, Dennison, and Co., defending the admixture of "exhausted" or "spent" ginger with pure ground ginger—such a composition, in fact, as that on which a conviction was obtained recently in Sheffield.

Whilst admitting the right of this firm to offer, in their own defence, any explanation of such a practice, we must challenge their authority to speak "for the trade generally." As far as concerns ourselves, we wish most emphatically to repudiate that "the decision has taken the trade generally completely by surprise," or that "so-called exhausted ginger always has been used and sold as a cheap ground ginger without question." We desire, also, to record that not only have we always refused to sell such a mixture, but we have besides continually protested against and warned our buyers of such sophistication.

It would be a reproach to your readers to imagine that they would credit, even on the authority of "one of the most eminent analysts here," that the residuum of any spice, or drug, or seed, after the exhaustion of its alcoholic extract, is not impoverished and robbed of its strength and pungency. But if, for a minute, we can be made to believe that no detrimental results are caused by such a process, why are we assured, in the concluding paragraph of their extraordinary letter, that "so-called exhausted gingers have only been used in the common low-priced qualities?"

To blend tea with exhausted tea-leaves, or to mix coffee with dried coffee grounds (if such processes are possible), and to sell such mixtures as pure tea or coffee, would be as discreditable a proceeding, in our opinion, as the practice these manufacturers attempt in their letter to defend.—We are, etc.,

GEORGE HARKER AND CO.

W. AND D. HARVEST.

W. AND C. PANTIN.

J. TRAVERS AND SONS (LIMITED).

In a prosecution of a Mr. J. R. Hood, grocer, Dunston, which we reported in our issue of June 9th, it was alleged by the solicitor for the defence that the ginger in question, which the analyst stated was adulterated with 30 per cent. of exhausted ginger, had been purchased by Mr. Hood from Messrs. Byers and Young, of Newcastle, who, in turn, had obtained it from Messrs. Pantin, of London. If the Messrs. Pantin referred to be the same firm as that signing the above letter, some explanation is certainly due to the trade and to the public. If they are not the same, then they should certainly take measures to prove that they have no connection whatever with the Messrs. Pantin concerned in the case.

TINNED FOOD POISONING.

THE poisoning season by tinned and other foods has set in with a vengeance. Last week we had to record the narrow escape from death of 20 persons at Crossflats, near Keighley, by poisoning caused by potted meat. The tinned meat supplied to the French army is now the subject of official inquiry, arising from the fact that on Monday night some of it dealt out to the soldiers afflicted 114 so severely that they had to be taken to the hospital. One of the persons attacked has already died and several others are in the gravest danger. The protection of the public from poisoning by tinned foods does not fall under the province of the Food and Drugs Acts, and it is to be hoped that some means will be taken to bring this fact prominently before the Select Committee upon Adulteration.

THE INCORPORATED BRITISH SOCIETY OF INSPECTORS OF WEIGHTS AND MEASURES.

THE Annual Meeting of this Society will be held in the County Hall, Spring Gardens, on Thursday and Friday July 12th and 13th, under the presidency of Sir John Hutton. Discussions will take place upon the decimal system, with special reference to the necessity of bringing the subject before the Inter-Colonial Conference at Ottawa, on Food and Drugs Acts, and on the flaw discovered in the Weights and Measures Acts, whereby the revenue derived by the various Local Authorities is endangered. The annual dinner will take place in the Holborn Restaurant on Friday at 7.30. For Saturday a trip to Hampton Court has been arranged.

DEATH FROM EATING FRIED FISH.

AN inquest was held at Bath on June 27th, on the body of William Scott, 21, road-mender, who died in the Royal United Hospital on the 21st inst. Evidence was given that after eating some fried fish deceased was taken with pains in the stomach and sickness. He had medical advice, but became so much worse that he was taken to the hospital, where he subsequently died. The city analyst (Mr. Gatehouse) had analysed the viscera, but could find no poison beyond the products of decomposition. Mr. Walsh, the medical officer at the hospital, thought that the deceased must have been poisoned by the eating of putrid fish; the intestines were so inflamed that it must have been caused by an irritant poison. The jury returned a verdict of death from poisoning but there was not sufficient evidence to show how it was introduced into the system.

BEER AND "SWIPES."

THE swindling brewers' advocates have, during the past week, been industriously endeavouring to hocus the *Standard*, and have again trotted out the ridiculous and ignorant nonsense of the Chancellor of the Exchequer, "that there were 2,044 samples of beer analysed for the detection of adulteration during the year, and in no case was the existence of a noxious ingredient found," to prove that beer is not adulterated. They conveniently ignore, as the Chancellor of the Exchequer did, the fact that the public in purchasing beer expect to get the product of malt and hops, and not a something produced from rice or sugar. If the Chancellor of the Exchequer be stupid enough to state that beer is not adulterated, it is no proof that such is the case, and Dr. Moritz and the other advocates of the brewers know this perfectly well.

To say that beer brewed from these substitutes is as good or as wholesome as beer brewed from malt and hops alone is not to the point. Our own investigations have shewn, for instance, that margarine and butter mixtures are quite unobjectionable, and some of them even better than many pure butters; but the law does not allow the sale of these substitutes as pure butter, and it is a great pity that ignorant Inland Revenue officials, such as Sir Algernon West, and his advisers, the even more ignorant Somerset House chemists, have legalised swindles in beer of a character which in the case of butter are punished with heavy penalties. This folly has benefited no person but the swindling brewer, whose enormous profits it has swollen, whilst it has thrown 1,500,000 acres of barley land out of cultivation, and deprived thousands of labourers of employment. We can quite understand, however, the feverish anxiety that pervades the brewers, and the attempt to humbug the *Standard* and deceive the public upon this question. It is a gross attempt to conserve a gigantic fraud, and in the public interest measures must be adopted to compel the brewer of the rice and sugar substitutes to call his brew rice beer, sugar beer, or Filthene or Swipesene, as each case may be.

At present there is nothing to prevent a brewer from using road-sweepings if he choose to do so, and the contentions made by correspondents of the *Standard* to the effect that beer does not contain any noxious or poisonous ingredients is not only sheer nonsense but utterly beside the question. There is no one fool enough to suppose that the brewer would use poisonous ingredients in his beer, for one reason the poison would be a great deal dearer than the trash he now employs, and another that he is far too great a rogue and too little of an ass to put substances into his beer which would effectually destroy his trade by poisoning his customers. This assumption of indignant virtue on the part of the brewer is therefore about as impudent a piece of bluff as we ever remember to have seen worked upon a newspaper. It is significant that it is never attempted with us, but only with papers whose writers have no real knowledge of the question.

LARD ADULTERATION.

THE extensive adulterations in this article render it almost impossible for English refiners to make a living, and it is a great pity that more samples are not taken for analysis. For instance, in a prosecution in the Blaina Police Court on June 19th, Mary Davies, grocer, Garnvael, was fined 20s. and costs for selling half a pound of lard to Mr. T. E. Sergeant, inspector under the Food and Drugs Act for the Monmouthshire County Council, on June 8th, which contained, according to the analyst's report, 77 per cent. of adulterants.

EIGHTEEN PER CENT. OF LARD IN CHEESE.

THE authorities in Liverpool last week prosecuted Hugh O'Neill, grocer, 117, Fountains-road, for having sold cheese which on analysis proved to have been deprived of nearly the whole of its natural fat, and to have upwards of 18 per cent. of lard added. The defendant said he bought the commodity for genuine cheese, and was ignorant of its quality. The magistrate adjourned the case for seven days in order that the source from which the cheese came might be discovered. Michael Riley, 57, Brownlow-hill, was summoned for selling cheese which had been deprived of the whole of its natural fat, and to which had been added upwards of 10 per cent. of lard. The analyst's observation was:—"The lard is added to conceal the inferior quality of the skim milk cheese." This case also was adjourned. It is to be hoped that they will get at the real authors of this swindle.

SINGULAR MILK CASE.

STEPHEN NUNN, of 14, Carlton-hill, was summoned at Brighton last week for selling a pint of new milk adulterated with not less than 20 per cent. of added water.—Mr. Talbot prosecuted, and Mr. J. C. Buckwell defended.—Sanitary Inspector Cuckney said on May 13th he saw Bernard Miles, a lad in the employ of the defendant, delivering milk in Islingword-road. Witness asked for a pint of new milk, and was served from a hand-can containing about two gallons. He paid 2d. for the milk. Defendant traded under the name of the Brighton and Hove Dairy Company, and these words were stamped on the can. Defendant carried on a large business, and had four shops.—Cross-examined: He did not know Miles till that morning. He based his evidence that Miles was in the employment of the defendant on Miles's own statement.—Bernard Miles was called, and said he lived at 26, Ivory-place. He helped Mr. Robinson, who sold milk for himself. He did not know where Mr. Robinson got the milk. Replying to further questions by Mr. Talbot, witness said he started with Mr. Robinson from Mr. Nunn's shop in Carlton-hill.—Mr. Talbot asked for an adjournment to enable him to call Mr. Robinson. It was the first he had heard of him.—Mr. Buckwell: You can call him. He is in Court.—Mr. Robinson, who resides at 9, South-street, said he purchased the milk of Mr. Nunn. He admitted that the cans and the perambulator belonged to Mr. Nunn, but said they were lent to him to sell the milk. He paid 10d. a gallon for the milk, and sold it on his own account. He did not pay for the milk before he started. He admitted that he was not registered as a purveyor of milk. He paid what he could to Mr. Nunn every day, and was supposed to settle at the end of the week, but he now owed about £5.—Mr. Buckwell submitted there was no case, as the evidence was plainly that the milk was Robinson's.—The Stipendiary: How if it is a fraud from beginning to end?—Mr. Buckwell: If you do find it a fraud I shall simply appeal.—The Stipendiary: Have you no defence at all?—Mr. Buckwell: There is nothing to defend. Robinson says he bought the milk of Mr. Nunn, and I submit there is no evidence of fraud.—The Stipendiary ruled that there was a case, and Mr. Buckwell called the defendant, but Mr. Nunn declined to give evidence, stating that he would submit to a conviction and appeal.—Defendant was fined £10 and costs, or a month's imprisonment.—Mr. Buckwell asked the Bench to find sureties for appeal, and the Stipendiary found two sureties in £25, or one in £50.

SPURIOUS POTASSIUM PERMANGANATE.

Now that the season has arrived when disinfectants are once more in great request, the customary recommendations to use permanganate of potash are appearing everywhere in the public press. It is anything but reassuring to find that the purchaser can by no means be certain that he is getting a substance having any disinfectant properties whatever. The Germans are making a spurious permanganate from dextrin, coloured with malachite green, which is mixed in large quantities with the genuine compound. To the professional eye the adulteration is easily detected, but the general public can be swindled by it with impunity. The whole question, however, of disinfectants is absolutely unsatisfactory, inasmuch as, however worthless or rubbishy they may be, they do not come within the scope of the Food and Drugs Acts, and therefore cannot be proceeded against if adulterated. As it is, the market is flooded with worthless trash. This is a question which should certainly be brought before the notice of the Adulteration Committee now sitting.

BEER AND WATER.

AT Lambeth John Thomas Smith was summoned by the Excise for diluting beer.—Mr. Squires, from the Solicitor's Department, Somerset House, appeared in support of the summons, and said the case was a bad one, the dilution being equal to 6½ gallons to a barrel of 36 gallons.—The defendant carried on business at a fully-licensed house in Marmont-road, Camberwell, and on March 27th, a supervisor of Inland Revenue took a sample of beer from a cask in the defendant's cellar. Upon examination at Somerset House, it was found that the beer had been diluted at least to the extent mentioned.—The defendant said his instructions to the cellarman were that he was in no way to dilute the beer, and the cellarman assured him that he used only a gallon of finings. The defendant had no chance of defending himself, as the Excise did not divide the sample, and he heard nothing of the matter for two months.—Mr. Squire pointed out that the defendant was present when the officers called, and could have had a sample if he had chosen to ask for it.—Mr. Biron (to defendant): You were there when they took the sample, and any man of ordinary intelligence would have taken a sample himself.—The defendant said samples had been taken from his place on previous occasions without any complaint being made. There must be some mistake in this case.—Mr. Biron ordered the defendant to pay a fine of £30, and £2 10s. costs.

MR. BIRON IMPROVES.

It has fallen to our lot to say many hard things of Mr. Biron with respect to the ridiculous penalties he has been in the habit of inflicting in adulteration prosecutions. We are very pleased to see that he has at last begun to appreciate the gravity of offences against the purity of food. At Lambeth, on June 29th, George Smith, of Manor Farm, Stockbridge, Hants, was summoned, on behalf of the Lambeth Vestry, for selling milk to which water to the extent of 40 per cent. had been added.—Mr. H. J. Smith, solicitor to the Vestry, stated, in support of the summons, that the milk was seized at Vauxhall Railway Station, the point of delivery, and upon being analysed was found to contain 40 per cent. of added water. The Vestry regarded the case as a very bad one, as milk dealers in London were frequently punished, although probably the farmers in the country, from whom they derived their supply, were to blame. Mr. H. T. Wiggs, an inspector appointed by the Vestry, in cross-examination, said the churn was not fastened in any way, and it would have been possible for it to have been tampered with after it left the defendant's premises. He had heard it suggested that railway servants sometimes tampered with the milk.—Mr. Blackwell, for the defence, said the defendant would tell the Court that he did not, nor did anyone by his orders, put any water into the milk.—Mr. Biron fined the defendant £9 and 32s. 6d. costs.

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MALTED
For Infants
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CONTAINS PURE MILK, WHEAT AND BARLEY MALT.
NUTRITIOUS, DIGESTIBLE. GUARANTEED ABSOLUTELY PURE.
OF ALL CHEMISTS AND STORES.
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THE IMPORTANT VINEGAR TRADE PROSECUTION.

AT the Sheffield Police-court, on June 29th, before Mr. Jeremiah Robertshaw, Mr. Percy Rawson, and Mr. Isaac Milner, Thomas Congreve Marshall, 10, Netherthorpe-street, vinegar manufacturer, appeared on a summons adjourned from June 1st to answer an information laid at the instance of Dr. Littlejohn, medical officer of health, charging him with having on April 2nd sold to William Harrison, inspector of nuisances, 12½ gallons of vinegar, purporting to be malt vinegar, but consisting of 20 per cent. of malt vinegar and 80 per cent. of dilute acetic acid. Mr. Sayer, deputy town clerk, prosecuted, defendant being represented by Mr. A. Neal.

The Chairman, on taking his seat, said that this case had been adjourned on the application of Mr. Neal for an analysis to be obtained from Somerset House. That analysis had been obtained, and had been submitted to the Court. He thought that the prosecution should be given an opportunity of dealing with this analysis. Mr. Sayer then read the following document, which had been received from Somerset House:—"We hereby certify that we have analysed the vinegar, and declare the results of our analysis to be as follows:—Specific gravity, 1011·85; acetic acid, 4·08 per cent.; total solids, 1·58 per cent.; ash, 0·0728 per cent.; phosphoric acid (P_2O_5), 0·0118 per cent.; saccharine matter, 0·9 per cent.; nitrogen, 0·0105 per cent.; alcohol as proof spirit 0·55 per cent. We are of opinion that this vinegar has been prepared by mixing products derived from the fermentation of malt and sugar, with acetic acid obtained by the destructive distillation of wood. From a consideration of the analytical results we are of opinion that the acetic acid derived from woods does not exceed a fourth of that present in the vinegar.

("Signed) " R. BANNISTER, F.I.C., F.C.S.
" G. LEWIN, F.I.C."

He would call the attention of the Court to the fact that there was practically no difference between the certificate of the official referee and that of Mr. Allen.—Mr. Neal said he agreed there was no difference in substance.—Mr. Sayer called attention to the fact that the Somerset House authorities expressed no opinion as to the proportion of malt vinegar present, but divided the conditions into vinegar derived from fermentation of sugar and acetic acid. Mr. Allen, he would point out, expressed no opinion as to the 80 per cent. of matter not derived from malted or unadulterated grain. The Somerset House authorities had not addressed themselves as they might have done to either contradicting or corroborating Mr. Allen's analysis.—Mr. Neal: They did not know his analysis.—Mr. Sayer: They do. They asked, and we told them.—Mr. Neal: Oh! then there have been some secret proceedings of which we know nothing.—Mr. Sayer: This information was sent up to Somerset House, and nothing was said about the certificate. An inquiry was made by Professor Bannister, who asked what the adulteration was said to be, and his query was answered by the magistrates' clerk.—Mr. Neal: I don't object to anything which has taken place between the officials of this Court and Somerset House.—Mr. Sayer: This communication was between Somerset House and the clerk of the justices.—Mr. Neal: I don't complain at all of that.—Mr. Sayer continued that he could not compliment the Somerset House people on the form in which their certificate was drawn up. He thought they ought to have directed themselves more specifically to what the complaint was. They should have directed themselves more either to confirm Mr. Allen or contradict.—Mr. Neal said he was very glad Somerset House had been consulted and he was glad to find what he expected, that among analysts of standing while there was no divergency in the result of their analysis there were very great differences in the inferences which they drew from similar facts. He would call their worships' attention to the fact that the Somerset House authorities did not condemn this vinegar or say that it was not saleable commercially as malt vinegar. What they did say enabled him to put before the Court his defence in the fullest possible manner, and gave him confidence in asking that the case should be dismissed. Their worships would recollect he had informed them that this man Radford who sold the vinegar had no right so to do, and was not authorised to act as agent for Mr. Marshall. That gentleman invariably put on every barrel he sent out the following label, which exactly agreed with the certificate from Somerset House:—"This article is guaranteed pure and wholesome, and is prepared from malted saccharine matter and the pure acid which forms the chemical basis of all vinegar. It is guaranteed free from sulphuric acid, poisonous or deleterious matter." Now Radford was not an agent, and had no right to sell this stuff. Under the circumstances he did not wish to use hard names, or to say that his client had been tricked, but the result of the operation by the Corporation officials was that a barrel of vinegar was obtained unlabelled, and Mr. Marshall had been laid open to these proceedings. He would further call their worships' attention to the facts admitted by Mr. Allen in cross-examination, that acetic acid was the basis of all vinegar, and that the suggestion was that the vinegar had been adulterated by its chemical basis. He also said that pure acetic acid from whatever source obtained was chemically and analytically undistinguishable. It seemed to him science run

mad to say that one could adulterate an article with the very thing which was its foundation. They could not have vinegar without acetic acid, and yet they said it was adulteration when acetic acid was put to it. The lowness of the phosphates and nitrates were the two chief signs by which an analyst detected malt from other vinegar. It was also admitted that if present in more than ordinary quantities these nitrates and phosphates tended to make a bad-keeping vinegar. The Corporation was standing up for a vinegar which would not keep, and which destroyed the pickles and other things in which it was brought into contact. His client had made the experiment. He had sold pure malt vinegar, and it had been returned to him. Now vinegar might be derived from a variety of things in addition to malt, and if sold as vinegar could not be attacked. On the last occasion the deputy town clerk took the opportunity of saying that this vinegar could be produced at 2d. or 3d. a gallon. He asked Mr. Sayer if he was going to prove that, and he said he would, yet he had not asked a single question about it, and the result had been most disastrous to Mr. Marshall. A statement had been made by an official of the Corporation, who said he was going to prove it, that Mr. Marshall was producing an article at 2d. or 3d. a gallon and retailing it at 7d., 8d., or 9d. He protested strongly against matters of that kind being introduced. They were not founded on fact, and no attempt had been made to prove them. Mr. Sayer further said he seriously doubted whether this man had a brewery at all, and insinuated that what he had was simply one or two mash tubs.—Mr. Sayer: I did not go so far as that; I did not believe he had any mash tubs.—Mr. Neal, continuing, said the authorities at Somerset House had taken an exceedingly wise and proper course. On two separate occasions without notice they had visited his client's brewery and inspected the premises thoroughly, and he might say that the premises were open at any time for the inspection of the city authorities. It was very wrong for a public official to have endeavoured to damage this man in his business, and whatever the result of that paltry prosecution might be to suggest that he had no brewery but simply a hole and corner place where he carried on a bogus business.—George Radford, carter, employed by Mr. Marshall, was then called, and, in reply to Mr. Neal, said he had no authority to sell this vinegar. When the inspector came to the brewery he never asked for malt vinegar in his hearing, but simply for "vinegar."—Radford was cross-examined by Mr. Sayer as to the process of brewing at the premises of Mr. Marshall.—Mr. Marshall, the only other witness called for the defence, stated that he had been twenty-three years in the trade. Radford had no authority to sell for him. He brewed some 1,500 gallons a week, and it was certainly untrue that he had no brewery. He had made vinegar entirely from malt, but it spoiled his trade. It would not keep and spoiled the pickles. From a business point of view he would consider it exceedingly bad brewing to brew pure malt vinegar. There was nothing in his article but malt and sugar vinegar in equal proportions, and he thought from 20 to 25 per cent. of acetic acid. It was not true that the vinegar could be produced at from 2d. to 3d. a gallon. The raw materials cost him 3½d. a gallon without any labour.—Cross-examined, witness said that his vinegar had been analysed six times by Mr. Allen, and each time he had given a different report. He was of opinion that to put any more malt in his vinegar would be deleterious. In every 120 gallons of malt vinegar he had 14 stone of malt, and to this he added 120 gallons of saccharine matter brewed and pumped in with the other and then added the acid. He used fifty gallons of acetic acid to every 1,250 gallons of vinegar. There were actually occasions when people insisted on having pure acetic acid supplied to them. He remembered the 30th August last when four persons were fined for selling his vinegar. He then paid the fine, and gave a promise to the magistrates not to get his customers further into trouble, but to take steps to prepare a proper label.—The magistrates retired, and after an absence of a quarter of an hour returned.—The Chairman said Mr. Neal had raised two points—first, as to the agency of Radford; and second, as to the article sold. They had considered both these points, and were still of opinion that Radford was an agent acting on behalf of Mr. Marshall, and also that the article sold was sold as malt vinegar and was not such. They therefore fined Marshall £5, including costs.—Mr. Neal asked their worships to fix the amount of sureties required in view of an appeal. The sureties fixed were one in £50 and two in £25.

AT Witham Petty Sessions on June 19th, the Hon. C. H. Strutt presiding, George William Drane, of Tolleshunt D'Arcy, was fined 5s. and costs for selling to Mr. Superintendent Gillis a quantity of coffee adulterated with 25 per cent. of chicory.

CLAY CROSS LOCAL BOARD AND ADULTERATION.—A letter was read from Mr. Outram announcing that he had been appointed inspector of food and drugs for the county, and asking for the co-operation of the Board in securing samples, etc.—It was understood the Board's sanitary officer would act with Mr. Outram.

ADULTERATING WHISKEY.—At Ruthin Police-court, on June 18th, John Henry Hughes, of the Red Lion, Gyffylling, near Ruthin, and Thomas Williams, of the White Bear, Ruthin, were fined 30s. including costs, for selling to Supt. E. Jones, of Denbigh, whiskey that was adulterated with water. The adulteration was 41½ per cent. in the former, and 6½ per cent. in the latter case.

THE BEER ADULTERATION SWINDLE.

ONE of the pleasantest, and certainly the most profitable, of rôles that any Members of Parliament can assume, is that of being a person of wondrously high character, and if one has a few friends to proclaim that character to be the quintessence concentrated of sublimated public honesty, the public in time can be really gulled into believing that the profession is just as good as the reality. We foretold weeks ago how the debate upon the beer duties would result. In the House of Commons on Wednesday, Mr. Quilter moved what we have often advocated in these columns—that the extra duty should be limited to the adulterated trash brewed from substitutes instead of from barley, malt, and hops. Mr. Quilter's speech was full of significant facts. He stated that his object was to encourage the product of pure beer, and to increase the interest of agriculture. Reform in the direction of pure beer was one of the most popular proposals in the programme of the National Agricultural Union. Of 32,000,000 barrels of beer brewed every year, a very large proportion was prepared from substitutes for barley, malt, and hops. Although the amendment would have the effect of reducing the amount payable to the Exchequer by about £250,000, that sum might be met by a licence charged to the users of substitutes, on the same lines as those which had governed the granting of the licence to the users of sugar. The licence, he now suggested, might be increased in amount according to the number of barrels brewed. Although, according to certain official returns, the use of sugar in brewing was not absolutely necessary, the total amount used in 1856 had been 1,790,528lb.; in 1876, 98,143,732lb.; and in 1893, as much as 237,772,280lb. No beer in the world was more refreshing than that brewed in Bavaria, and the reason was the stringent application of the law forbidding the use of any substitute for barley, malt, and hops.

The lineal descendant of the Plantagenets, our worthy Chancellor of the Exchequer, opposed this amendment on what is possibly the most immoral ground ever advanced by a responsible minister of the Crown. Sir William Harcourt stated that by this amendment they would be legislating against the great majority of brewers, whose pundits had said that 10 per cent. of raw grain—sago, maize, or rice—or of sugar could be used without spoiling the article. Moreover, there was nothing to prevent the use of Russian barley. In the interests of the Revenue, he must protest against this proposal, which would be absolutely destructive of the revenue derived from this source. The question of pure beer was not a new question; it had been pressed upon Government after Government; it was pressed for six years on the late Government, and they rejected it. In the public interest he was bound to decline to accept the amendment (Ministerial cheers).

A more dishonest answer than this, that in the public interest he was bound to decline to accept Mr. Quilter's amendment, it would be hard to find, and there is little wonder that Sir William Harcourt's defence of adulteration was received with frantic applause by the brewing gang who so largely control the House of Commons.

Of course, that embodiment of all that is excellent in high character, Mr. Whitbread, was enraptured with Sir William's speech. His reasons for opposing the proposal to make beer again a pure and wholesome drink were such as might be expected to emanate from so good a man. He argued that such a law would tell entirely in favour of the larger and wealthier firms, and disastrously against the smaller and poorer brewers. To take such a step would practically ruin the smaller man, and he should not now lay himself open to the charge that he was a party to the fixing of a charge upon the poorer firms who were less able to bear it than the richer brewers, whom it would affect only in a much lesser degree.

There is a Pecksniffian flavour about this plea that merits a little attention. As Mr. Long stated, the member for Bedford is not only a great brewer, but a virtuous brewer; but Mr. Long omitted, in his castigation of Mr. Whitbread, to point out the fact that Mr. Whitbread's statements that this proposal would injure the smaller brewers are absolutely untrue. Mr. Whitbread knows as well as any of those members who are concerned with defending the sale of adulterated beer, that it is not the smaller brewers who practise this adulteration. Those who have made enormous fortunes out of it are the large firms in Liverpool, Manchester, and other of our great cities and towns, who own their many hundred of tied houses and are able to get rid of any amount of swipes as beer. These are not small brewers. The plea, therefore, that such legislation must be resisted on account of the small brewers is neither more nor less than pharisaical humbug. Of course, the Chancellor of the Exchequer made the most of what he called the important evidence given by the honourable member for Bedford, and the honourable member for Wimbledon—both brewers—and the amendment to secure pure beer was defeated by a majority of 57 votes.

The fact, however, that there were 196 members of the House of Commons in favour of the proposal is a very significant and encouraging one, and we trust that a pure beer Bill will be pressed forward with increased energy; and that, despite the excellent character of that worthy man Mr. Whitbread, and his solicitude for the smaller brewers, the day is not far distant when the maker of swipes will be compelled to label it, stating the exact nature of its constituents.

THE ARTIFICIAL COLOURING OF SUGAR.

June 21st.

SIR,—In your issue of June 16th, a letter appears from Messrs. Lyle & Sons bearing upon the "artificial colouring of sugar" with reference to "refiners' yellow" and Demerara crystals.

Messrs. Lyle are quite at liberty to say what they please about their own sugars, but when they take upon themselves to assert that Demerara cane sugars are artificially coloured equally with their own, they should take care to make themselves acquainted with the details and principles of Demerara manufacture before committing themselves to a statement so damaging to the latter.

As a matter of fact, the lemon-yellow colour of true Demerara sugars—and also of West Indian sugars made on the Demerara system—is derived from the colouring matter of the cane juice itself; the chemical methods of clarification and purification adopted, which cannot in any sense be described as the use of colouring matter, are rendered necessary in order to leave the colouring matter present in the juice in its natural condition.

The colour of Demerara sugars, therefore, due to the cane juice itself, admits of no comparison with the aniline dye used to colour the crystals of Messrs. Lyle.

Messrs. Lyle go on to say "many planters have copied the system of colouring adopted by us." This is misleading, the real facts of the case being that in a few isolated cases, where a good natural colour was not obtainable, from difficulties connected with the manufacture, colouring matter was experimentally tried, but almost universally with unsatisfactory results. I am, &c.,

N. LUBBOCK, Chairman.

West India Committee, Billiter House, E.C.

ADULTERATED MILK.

At the Wolverhampton Police-court on June 20th, a milkman named Thomas Samuels, of Tividale, was summoned for selling adulterated milk. A pennyworth of milk was purchased from the defendant by an officer of the County Council, and upon being analysed it was found to contain 13 per cent. of added water. Defendant pleaded that the milk came from his own cow. The Stipendiary remarked that the inference was that part of it had come from the cow with the iron tail. A fine of £5 and costs was imposed, or in default, two months imprisonment.—For selling milk from which an illegal amount of cream had been extracted, the following persons were each fined 20s. and costs:—Winifred Perry, 71, Worcester-street; Henry Burgess, 228, High-street, Bloxwich, and of the Wolverhampton Market Hall; Henry Dunn, 24, Snow Hill; and William Lowe, 5, Worcester-street, all refreshment-house keepers.

At the Leeds City Police-court on June 25th, Nathaniel Langley, farmer, of Adel, Leeds, was fined 50s. and costs on each of two charges of selling adulterated milk. The case was proved by Inspector Walker, and Mr. C. C. Jolliffe, the deputy town clerk, prosecuted on behalf of the Corporation.

WATER IN BUTTER.

WILLIAM ATKINSON, Waringstown, was prosecuted at Lurgan Petty Sessions on June 19th, for selling adulterated butter. Sergeant John O'Grady, inspector of food and drugs, prosecuted, and Mr. C. Johnston defended. The complainant said he went to Mr. Atkinson's shop and purchased one and a-half pounds of butter, and had a portion of it analysed by Sir Charles Cameron, the public analyst for county Down, and he produced Dr. Cameron's certificate, from which it appeared that the butter contained 18 per cent. of water, while 16 per cent. was the largest quantity generally permitted. The Clerk (Mr. Magahan) said he had written to Sir Charles, who replied that anything in excess of 16 per cent. of water was an adulterant, on which prosecutions had been sustained in other parts of Ireland. Mr. Johnston stated that the law laid down no standard for water in butter. The matter had been discussed by the Belfast grocers, who recommended that 20 per cent. should be fixed as the standard, but to fix the standard at 15 or 16 per cent. would shut 50 per cent. of Irish butter out of the market. Evidence having been given to show that the defendant had purchased the butter from a respectable farmer, the Court held that there was no established standard on the subject, and dismissed the case.

CONTRACTS FOR DISINFECTANTS.

IMPORTANT NOTICE!

To Local Boards of Health, Vestries, and Sanitary Authorities generally.

THE SANITAS COMPANY, LTD., beg to give notice that they have reason to believe there are several unprincipled firms who are offering for sale more or less worthless and fraudulent imitations of the well-known "Sanitas" Disinfectants.

The various "Sanitas" Disinfectants are all manufactured by scientific processes which are protected by Letters Patent, and in order to guard against the nefarious practices above referred to, it is respectfully suggested that all contracts for "Sanitas" Disinfectants and Appliances should be entrusted to the Sanitas Company, Ltd., who are the sole manufacturers, or that a stipulation should be made making it obligatory upon contractors to supply the goods in our original sealed packages.

THE SANITAS COMPANY, LIMITED

(C. T. KINGZETT, F.I.C., F.C.S., Managing Director)

LETCHFORD'S BUILDINGS, THREE COLT LANE, BETHNAL GREEN, LONDON, E.

CONFERENCE ON THE SALE OF FOOD AND DRUGS ACT.

At the instance of the Vestry of St. George's, Hanover-square, W., a Conference of local authorities was held at the Vestry Hall, on June 22nd, to consider the desirability of taking action with the view to the Sale of Food and Drugs Act being amended, so as to bring the manufacturers of and wholesale dealers in adulterated articles within the scope of its provisions; and also to empower inspectors in one district to take samples at the railway stations in another district for consignments to vendors in their own district.

On the motion of Mr. Adkins (St. George's), the Hon. Alan de Tatton Egerton was elected chairman.

The Chairman said that the Conference was called in consequence of the failure of the local Food and Drugs Committee to carry out the Food and Drugs Act. Since that step was taken the Government had appointed a Select Committee of the House of Commons to go into the whole question, and see what amendments should be brought forward. The Food and Drugs Act Committee of the St. George's Vestry had formulated a few suggestions for them to take into consideration, as follows:—

"(1.) Inspectors should be empowered to take samples at any railway station or other place of delivery by consignors or wholesale dealers, whether within or outside of the district for which they are appointed, of any articles which may be consigned or addressed to any person or company within the limits of their respective districts. (2.) No warranty shall be admitted as a defence unless at the time of purchase the vendor shall produce to the purchaser, and allow him to take a copy of any warranty on which he intends to rely, or shall within twenty-four hours send to the purchaser a copy of such warranty. (2A.) To amend Sec. 14 of 38-39 Vic., chap. 69, by substituting the word 'four' or 'fourth' for the words 'three' and 'third,' and adding words to secure that one part of sample should be sent to the person giving the warranty. (3.) Nothing shall be held to be a warranty unless it shall clearly and accurately describe the article to which it relates, and shall give the date and full name and address and description of, and be signed by the person giving the warranty, or by some person duly authorised on his behalf. All warranties should be in a form to be set out in a schedule to the Act, and should not be received in evidence unless the warrantor or duly authorised agent resides within the United Kingdom. (4.) Where a warranty is relied upon and is produced as before-mentioned, when the inspector or local authority of the district where the purchase was made or to which the article was consigned, may summon the person giving the warranty as well as the immediate seller or consignee, and such proceedings may be taken in the court having jurisdiction in such district. The summonses should be heard together, and the magistrates should be at liberty to convict either or both the defendants in a penalty not exceeding £20 and costs for the first offence and more for repeated convictions. (5.) Any article bearing a label describing the contents of the package shall be held to conform to the name or description on the label to which the greatest prominence is given, and any article differing in substance or purity or proportion from such description or descriptions shall be held to be an adulteration under the Act. (6.) A uniform standard for milk should be fixed, and any milk found below this standard should be held to be adulterated. (7.) The magistrates should give reasonable costs in successful prosecutions, and not merely a nominal sum as at present." Besides those suggestions of the St. George's Board, Mr. H. Mansfield Robinson, of Shoreditch, has had submitted the following suggestions:—"(1.) That the defence of a written warranty shall not be set up by the retail dealer, except when he shall have notified to the inspector when taking the sample the name and address of the person giving the warranty. The inspector shall then proceed to divide the sample into four parts, sending one part to the wholesale dealer, who shall then be liable to the same proceedings as if he had sold the article to the inspector direct. (2.) That all itinerant vendors of milk shall only sell from vehicles or barrows having printed thereon the name and address of the person who shall be responsible as master for such sale, and all itinerant purveyors of milk, whether employers or employed, shall be registered with the County Council of the district, and it shall be an offence under the Act for the vendor of any article to give a false name and address of himself or his employer to an officer under the Act. (3.) That a minimum penalty of 40s. be imposed for all offences under the Act, and that the defendant shall be liable to a double penalty for a second offence and a treble penalty for a third offence. (4.) That a standard of purity for milk and butter should be fixed by the Local Government Board, with power for them to alter it in case of exceptional seasons. (5.) That the retail dealer shall have the same power to bring the wholesale dealer (from whom he has bought the article, in the same state as that in which he sold it) before the Court for conviction, as is given to the purchaser of unsound food, under Section 47, subsection 3, of the Public Health (London) Act, 1891."

Major Creswell (St. James's Vestry) said that in many cases the profit on the articles sold was so great as to enable persons convicted to pay the fines with impunity, and he thought suggestion 4 should be amended in such a way so that it should read that after certain convictions imprisonment should follow, and in some cases hard labour, as the sale of such articles was a danger to the public.

The Chairman said that the suggestions should be taken one at a time and discussed, and that the suggestions from Shoreditch should be incorporated where necessary. He formally moved the first suggestion of the St. George's Vestry.

Mr. Easton (Fulham) moved that after the word inspectors "or other authorised persons" should be inserted, and this was agreed to.

Mr. Gofton (Islington) said it was clear that under the Act of 1879 the authorities had power to take samples of milk at the railway stations, but not of food and drugs, and he moved that those words be inserted.

After further discussion it was decided to amend the suggestion so as to read:—"Inspectors or other duly authorised persons should be empowered to take samples of foods and drugs in course of delivery by consignors or wholesale dealers," etc.

Mr. Easton wished to add words to the suggestion that it should be within the power of any person on tendering a fee to the vestry to have samples of any article taken in course of delivery, but the suggestion was not accepted.

THE QUESTION OF WARRANTY.

Dr. Muter thought warranty should be abolished altogether.

Mr. Brooks (Wandsworth) moved the following amendment:—"This Conference is of opinion that the best way to meet the object aimed at is the repeal of Section 25 of the principal Act, and to substitute therefor a provision similar to the proviso of Section 42 of the Public Health Act, London, 1891, to the effect that where a person is charged with an offence under the principal Act he should be entitled, on information duly laid by him, to have any other person being the wholesale trader, manufacturer, or other person from whom he purchased the article, brought before the Court at the time he is charged, and if he proves to the satisfaction of the Court that he sold the article as he purchased it, he shall be exempt from all penalties, and the said vendor shall be liable to conviction."

Mr. Jones (Hammersmith) seconded the amendment.

A delegate strongly urged that the time for prosecutions should be extended.

Mr. Millar (Wandsworth) said that if they did away with the formal warranty and assumed that there was a warranty with everything, a man would only have to prove that he delivered the article in the same way as he received it, and then the onus of the matter would fall upon the manufacturer or wholesale dealer.

Mr. Easton moved another amendment, viz.:—"Any dealer pleading a warranty shall cause the warrantor to attend the Court, and upon his proving to the satisfaction of the magistrate that he sold the article as he received it, the warrantor shall be charged with the offence, and proceedings against the dealer shall be discharged."

Mr. Payne seconded the amendment.

On a show of hands, Mr. Easton's amendment was lost, and the resolution of Mr. Brooks adopted in lieu of Clause 2 and of the St. George's suggestion.

The Chairman said the question involved in Clause 2A was that where a manufacturer was brought in he should have a sample.

It was pointed out that the clause was not needed, and it was struck out.

As the amendment to Clause 2 did away with the question of warranty, Clauses 3 and 4 were not needed, and were accordingly struck out.

THE LABEL QUESTION.

The Chairman formally moved that Clause 5 be adopted, and said it would specially apply to milk preparations which had an enormous sale.

Mr. Robinson said that the weak point of the Clause was that it did not say that the proportion of the contents should be stated, and he would move that the proportions of the mixture should be stated on the label.

Mr. Hughes said he was under the impression that the Swiss milk could not be opened to be analysed.

The Chairman said they had done it in that parish.

Mr. J. H. Smith (vestry clerk) formulated the suggestions so as to read after the opening words, "Any article bearing a label" as follows:—"shall describe the contents of the package, and where the contents are sold as a mixture the proportions of the mixture shall be stated."

Mr. Kerrell said that as a manufacturer of baking powder he regretted there was no law to touch the adulteration of that article with alum.

The amended clause was adopted.

To be continued.

TEMPERANCE BEERS.

SOME revelations made at Aberdare Police-court last week will alarm teetotalers, it being proved that a vendor of temperance beer was selling a liquor that contained rather more than 7 per cent. of alcohol, a quantity even in excess of the alcohol contained in ordinary beer, and some 3 per cent. more than is found in lager beers. It would be interesting to know if the various temperance hop beer, etc., now so largely advertised, are really devoid of alcohol, as it must be anything but satisfactory to the staunch teetotalers to learn that they are drinking of the alcohol they so vigorously denounce even more than an average beer drinker.

THE SELECT COMMITTEE ON ADULTERATION.

THE first sitting of the Select Committee appointed to inquire into the adulteration of food stuffs, dairy produce, and drugs, and the working of the Sale of Food and Drugs Acts of 1875 and 1879 and the Margarine Act of 1889, took place at the House of Commons on Tuesday last. Sir Walter Foster presided, and the members who attended were: Mr. Herbert Gardner, Sir Charles Cameron, Sir Mark Stewart, Mr. Channing, Mr. H. E. Kearley, Mr. J. J. Coleman, Mr. F. Frye, Mr. Jeffreys, Mr. Yerburgh, Captain Bagot, Colonel Warde, Mr. Lambert, Mr. Kennedy, Mr. Kilbridge, and Mr. Colston.—The first witness to give evidence was Mr. Preston Thomas, of the Public Health Department of the Local Government Board, who stated in answer to the chairman that the Acts of Parliament which came chiefly under his notice in the course of his official duties, were the Sale of Food and Drugs Act of 1875, the Amending Act of 1879, and the Margarine Act of 1889. The former, he explained, provided for the appointment of public analysts for county boroughs and boroughs having their own police establishment for the City of London and for each of the London vestries. This was slightly altered by the Local Government Act of last session, which took away from boroughs of less than 10,000 population the right to have analysts of their own, and placed them under the County Council. In reply to an inquiry from the chair as to the extent to which this power of appointing analysts had been taken advantage of, Mr. Thomas said practically in all districts the authorities had either appointed their own analyst or made an agreement for the services of the analyst of some neighbouring district. The Chairman: Can you give us any figures as to the number of analysts appointed?—Mr. Thomas: There are 61 acting for administrative counties, 61 for county boroughs under section 10 of the Act; three acting for county boroughs under section 11—that is, by agreement. There are 68 appointed by non-county boroughs with a population of over 10,000, and there are three acting for non-county boroughs by agreement under section 11. Then there is an analyst acting for the City of London, who is appointed by the Commissioners of sewers, and there are 40 analysts acting for vestries and district boards. That makes a total of 237 districts for which analysts have been appointed or are acting under agreement, and that practically covers the whole of the country.—The Chairman: These analysts are all men of good qualifications?—Mr. Thomas: Yes. Before the Local Government Board give their approval to the appointment of an analyst they require a statement of qualifications, and he must produce evidence of competent microscopic and chemical knowledge, and also, to a certain extent, medical knowledge—that is, the effect of adulteration upon health.—The Chairman: In some cases these analysts act for a number of districts?—Mr. Thomas: That is frequently the case.—The Chairman: Can you give us any examples?—Mr. Thomas: I am hardly able to do so now, but in a great many cases analysts act for five, seven, or eight districts.—The Chairman: Where do they reside?—Mr. Thomas: Very often at a distance from the district; but no difficulty results, because there is a special provision in the Act of 1875 so that samples may be sent through the post. This brings the analyst within a day of the purchasing inspector.—The Chairman: Then you are of opinion that it causes no inconveniences?—Mr. Thomas: So far our information shows none.—The Chairman: The authorities are not only empowered to appoint analysts, but to obtain samples. Through whom?—Mr. Thomas: Certain officers named in the Act. The medical officer of health is empowered to do so, but the officers generally are the inspectors of nuisances and the inspectors of weights and measures. In some places the police take samples—rather in the counties than in the boroughs.—The Chairman: Do private persons obtain them?—Mr. Thomas: They may; but the provision enabling them to obtain the analysis of samples on payment of half a guinea has not been taken advantage of. I think it is because persons do not like to go through the trouble and formality of getting samples, and would not do so without a very clear idea that they are being cheated. Practically, with the exception of a very small number, all the samples that are analysed are taken by inspectors.—The Chairman: The first part of the Act deals with certain special adulterations?—Mr. Thomas: That deals with adulterations injurious to health and it has been very little used. In the first place, I believe it is because adulterations injurious to health are diminished since the old days of the *Lancet* inquiries. Moreover, the fines are high, and guilty knowledges have to be proved, which is very hard to do. This has not to be done in the second part of the Act.—The Chairman: Then you think the proof of guilty knowledge is one explanation of its not being used?—Mr. Thomas: I think so. The second reason I should give is that such adulterations have diminished. If we are to believe those old inquiries, people were poisoned constantly. Now, if they are cheated, they are not poisoned.—The Chairman: You told us the second Act was passed in 1879; for what purpose?—Mr. Thomas: To settle some legal difficulties which had arisen, owing to a decision of the High Court in Scotland, on the interpretation of “to the prejudice of the purchaser.” It was contended that he could not be prejudiced if he bought, not for himself, but for the public. That view was upheld in Scotland, but the English Courts decided the other way. Therefore the Act was passed, making it plain that an inspector might be prejudiced. Then the Act authorised samples of milk to be taken from railway stations, and it fixed the standard strength of spirits and made certain provisions as to the time within which

summonses must be served in respect of perishable articles.—The Chairman: Then the Margarine Act proceeded further?—Mr. Thomas: It proceeded further but not quite in the same direction. It was not an amendment of the Sale of Food and Drugs Act, although certain of the provisions of that Act were included in it. It provided that every quantity of margarine sold should have a wrapper bearing the word “Margarine” in letters $1\frac{1}{2}$ inches square. The vendor was protected by a warranty or an invoice. Then inspectors might take samples of any butter without going through the form of purchase provided by the Food and Drugs Act. It is not quite clear whether the form of purchase includes the essential of purchase, that is, paying for the sample. I do not think the point has been settled whether an inspector may take a sample without paying for it. Under the Food and Drugs Act he has to pay for every sample.—The Chairman: Then, under the Margarine Act, the maximum penalty was raised?—Mr. Thomas: That is so. It was raised from £20 under the Sale of Food and Drugs Act—or £30 in the first part—to £80 or £100.—The Chairman: There have been many decisions arising out of these Acts?—Mr. Thomas: A very large number. I have a note of between 60 and 70 decisions. Mr. Thomas agreed and prepared a digest of the decisions he had noted, and presented it to the Committee.—Replying to a question from the chairman as to the administrative work of the Local Government Board in connection with the Acts, Mr. Thomas said the Board scrutinised the qualifications of public analysts. He thought the science of analysis had made extraordinary progress in the nineteen years that had passed since the Sale of Food and Drugs Act came into force. He attributed that to the efforts of the analysts, and he thought there had been very few incompetent members of that profession admitted to public appointment.—The Chairman: The Board have also a return from each local authority?—Mr. Thomas: Each local authority sends a copy of the four returns that the analysts have to make in the course of the year. Each analyst has to make a quarterly report, and a copy of these reports for the year is sent to the Board.—The Chairman: And the Board make an abstract of them in their annual report to Parliament?—Mr. Thomas: That is so.—The Chairman: Can you give us some account of the figures relating to these analyses between 1877 and 1893?—Mr. Thomas: From 1877 to 1883 the number of samples rose pretty steadily from 14,705 to 19,648. In 1884 the Board issued a circular to Sanitary Authorities urging them to exercise their powers in submitting samples. I ought to have stated earlier that all authorities, besides those appointing analysts, have the power to collect samples and send them for analysis. Before the circular they had not taken much notice of the matter, but after it the authorities exercised their powers much more extensively and there was a sudden rise from 19,648 to 22,951 and the subsequent increase has been pretty constant. The number of samples analysed in 1893 was 37,293, showing an increase of 173 per cent. as compared with 1877, while the population has only increased 19 per cent. The Board have urged that at least one sample should be taken for every 1,000 of the population.—The Chairman: That was the standard the Board sought to attain?—Mr. Thomas: That was the minimum standard the Board thought would secure the proper administration of the Acts. It was not till 1891 that that proportion was reached, but by last year things had got better and the proportion had risen to the one sample for 779 of the population.—The Chairman: Then it took from 1876 to 1891 to reach the minimum standard laid down? Since 1891 you have got beyond it. These figures are based upon the general average all over the country?—Mr. Thomas: That is so. In some districts many more samples are taken, while in others the number is much fewer. In London the proportion was one for every 530, and in the provinces 842. In some districts the Acts are practically a dead letter.—The Chairman: Can you give us examples of those districts in which the Acts are practically a dead letter?—Mr. Thomas in reply said that within the jurisdictions of the County Council of Hereford and Montgomery, and the Town Councils of sixteen boroughs, including Northampton, Colchester, and Dover, not one sample was taken. Within the jurisdiction of the County Council of Derby and several others and a number of boroughs the number of samples taken was so small as obviously to afford no security against adulteration. In all there were 45 districts, with a population of 3,000,000 in which the Acts were either a dead letter or the number of samples taken was quite insignificant. In all those districts there were only 546 samples or one for every 5,000 of the population.—The Chairman: Have you any explanation to give?—Mr. Thomas: No, it depends entirely upon the will of the local authority. In all cases where no samples are taken the Local Government Board address a communication calling the attention of the authority to the fact that the Act is not properly enforced in their district. Sometimes there is some result, but very often not.—The Chairman: And the Local Government Board have no further power?—Mr. Thomas: They have none.—The Chairman: I think it is a satisfactory result in one respect, that the number of adulterations detected is increasing? Can you give us some figures?—Mr. Thomas: I have taken the year 1877 as a commencing point, because in 1876 the Acts were new, and things came in with no fixed plan. Taking the year 1877 to 1881, the percentage of samples reported as adulterated was 16·2. In the following five years ending with 1886 the percentage was 13·9. In the following five years ending with 1891 it was 11·7. It reached its minimum in 1888, being 10·8. Since that there has been some increase, and last year the proportion was 12·9, mainly

owing to the two items, milk and spirits. It is to be remembered that of the samples thus reported against as adulterated there are many in which the adulteration was so small in amount that it was not thought expedient to take the case into Court. The Analyst returned them as adulterated, probably with a recommendation that the amount was not sufficient to warrant proceedings.—The Chairman: Then your figures do not represent the proceedings. They represent the reports of the analyst?—Mr. Thomas: Last year 4793 samples were reported against. Proceedings were taken in 3174 cases and fines imposed in 2687.—The Chairman: Were convictions only obtained in the cases in which fines were imposed or were these cases in which warnings were given? There is a margin between the number of cases undertaken and the fines inflicted.—Mr. Thomas: Some of the cases were dismissed, in others a caution was administered, and others were let off with paying the costs.—The Chairman: Do you know how many were dealt with in each way respectively?—Mr. Thomas: I am not sure, but I could ascertain.—The Chairman: If you would draw up a little table and hand it in it would be useful. These fines came to a considerable amount, I suppose?—Mr. Thomas: The correct amount was £5,091 12s. 8d. The average penalty was £1 17s. 11d. as against £1 16s. 2d. in 1892, and £1 11s. 2d. in 1891. Thus the average amount of the fines has increased.—The Chairman: I suppose there have been complaints about the smallness of the fines?—Mr. Thomas: Yes. Many representations have reached the Local Government Board that it pays to suffer a small fine.—In reply to questions from the Chairman, Mr. Thomas gave some particulars concerning the number of cases in which the maximum penalty had been imposed since 1888, and stated that only two instances were recorded in which the higher penalties under the Margarine Act had been inflicted, one of these being £45 and the other £30.—The Chairman: You have many representations as to the amount of the minimum fine?—Mr. Thomas: Yes, very frequent suggestions that the Board should promote legislation to provide that there should be a minimum fine laid down, but that would be opposed to the whole practice of modern legislation and would not secure the end in view, because many cases in which a small fine is now inflicted would be dismissed if a minimum were fixed—in the case of an old woman for example. At the request of the Chairman, Mr. Thomas stated the various articles analysed during the year, in their order according to the number of samples of each analysed. They were as follows: Milk, butter, spirits, lard, coffee, pepper, vinegar, bread, mustard, tea, beer, flour, confectionery (including jam), cheese, sugar, arrow-root and cocoa. The Chairman: Can you tell us how many samples of milk were analysed in 1893?—Mr. Thomas: Out of 37,293 samples of all kinds, 15,543 were of milk, and 2,310, or 14·9 per cent. were reported against.—The Chairman: In how many cases were proceedings taken?—Mr. Thomas: In 1,542; 152 were dismissed, 55 were withdrawn; in 43 cases costs only were paid. There were 132 fines of £5; 20 between £5 and £10; 33 of £10; 4 between £10 and £20; 20 of £20; 192 were of a half-crown or less; and 243 between a half-crown and 5s.—The Chairman: The chief adulteration in these cases was water?—Mr. Thomas: Yes, if the other additions such as chalk, etc., of which we have heard, were ever used they are not used now.—Mr. Kearley: There would be extraction of cream I presume?—Mr. Thomas: Oh, very frequently.—The Chairman: Has the number of samples reported against declined?—Mr. Thomas: The proportion in the first five years was 22·1; in the second five years 16·7; in the third five years 13·4. In 1892 it was 13·3, and in 1893 14·9.—The Chairman: So it has gone up again. How would you account for the reduction since the first five years?—Mr. Thomas: I think the Acts have had a hand in preventing adulteration. The difference between 21·1 in the first, and 13·4 in the last, five years, may be accounted for by the fact that analysts in the early times took a much higher standard than they do now. Therefore, it is not quite a gain in the reduction of adulteration, but it is an alteration of the analyst's opinions as to what is adulteration.—The Chairman: Does not the quantity of water in milk depend very much on the weather?—Mr. Thomas: That I have heard said. It is curious that the percentage of adulteration depends very much on the weather. In a hot summer, when there is very little grass, and milk is scarce, up goes the percentage of adulteration, as a matter of course. On the other hand, if you have a very wet summer it goes down. In the Jubilee year of 1887 there was magnificent weather and very little grass. Last year it was the same. In 1887 the percentage rose very much and last year again. In 1888, which was a very wet year indeed, when there was an enormous hay-crop and plenty of food for cattle, there was a small percentage of adulteration; it was at its very lowest, namely 10·8.—The Chairman: The coincidence is interesting. Hot weather would act in two ways. It would increase the consumption and lessen the supply and the consequence would be the milkman would have to make it up in some way or other.—Mr. Thomas: And more milk turns sour in hot weather.—The Chairman: This question of milk adulteration is a very difficult one, I believe.—Mr. Thomas: Yes; and the difficulty arises from the fact that science cannot distinguish rich milk that has been watered from milk that has not been watered, but is the product of a very old or poorly-fed cow.—The Chairman: So that a man may have an old cow, and while selling genuine milk present a standard so low as to be reported upon adversely.—Mr. Thomas: That would be so. In answer to other questions Mr. Thomas expressed an opinion that it was impossible that analysts should fix upon any standard

of solids which milk should contain. In examinations of milk from 273 cows by the Somerset House authorities, the total solids contained in the respective samples varied from 10·3 to 15·8 per cent. If between these extremes a high standard should be fixed many genuine samples would be condemned. If a low standard were decided upon milk would be watered down to it. If they fixed their standard low enough to include all genuine milk they might as well give the whole thing up, for it was very rare that watered milk was made so low in quality as that obtained from the poorest cows. They had had instances come to them where milk taken from cows in the presence of experts was found to be of very low quality.—The Chairman: The Acts were not intended to prevent the sale of articles of poor quality but only to put a stop to adulteration.—Mr. Thomas: That is so, and it would not be within the design of the Acts, because the poor man's cow does not produce milk as good as that of the higher-class and better-fed animals to prevent him from selling it.—The Chairman: In different districts the proportions of samples reported against differs?—Mr. Thomas: Yes. In London the proportion was 25 per cent., 19 per cent. in Birmingham, and 18 per cent. in Liverpool. In Manchester it was 5 per cent., and 3 per cent. in Cardiff and Salford.—The Chairman: And it differs in different districts in London?—Mr. Thomas: Yes, and in districts next to each other, where one would think the supply would be the same. In 1888, in Marylebone, out of 258 samples only 15 (or 6 per cent.) were reported against. In St. Pancras, out of 129 analyses, 55 samples (or nearly 43 per cent.) were condemned. In Woolwich the proportion was nearly 6 per cent.; in Greenwich 22 per cent. In 1891 the proportion of adulterated samples ranged from 46·8 per cent. in St. George the Martyr, Southwark, and 47·2 per cent. in Lambeth, to 1·6 per cent. Lewisham, and none in Hampstead, and none in St. James's, Westminster.—The Chairman: Do you think there is any difference in the way the samples were taken to account for this?—Mr. Thomas: That I cannot say. The official papers of the Board do not show any exception.—The Chairman: But in some cases the samples are taken by inspectors in uniform.—Mr. Thomas: Yes, and that is the way to get, not an average supply, but milk with a little extra cream in it. In one case an analyst was astonished because a sample had about twice the amount of cream than the very best milk would contain. The Chairman: In Salford there would probably be something special to account for the low percentage of adulteration.—Mr. Thomas: For a great many years Salford has figured as having one of the best milk supplies in the kingdom.—The Chairman: Have you anything to say about condensed milk?—Mr. Thomas: It is often made from skim milk and contains very little nourishment. Infants would be half starved if fed upon this. Continuing, Mr. Thomas said it was a question whether the sale of milk which had been treated both by skimming and by the separator, did not call for some alteration in the law. The Local Government Board had received an influential representation from analysts and members of the medical profession as to the danger of these brands, some of which were made in Ireland and some in Switzerland, although some of the best Swiss brands left nothing to be desired, and were a great contrast to some of the brands made from separated milk.—The Chairman: Then there are a number of brands which are no good? Has your attention been called to separated milk?—Mr. Thomas: Yes, I understand it is something more than skim milk, because the separator skims it much more effectually.—The Chairman: But still it may be genuine?—Mr. Thomas: Yes, it would come under the description of "skim milk."—The Chairman: At the same time, condensed milk is often genuine and very useful?—Mr. Thomas: But I think the amount of nutriment is very small.—The Chairman: What about butter?—Mr. Thomas: One-sixth of the total samples reported upon are of butter.—The Chairman: The proportion of samples condemned is about the same as milk?—Mr. Thomas: Yes, but whereas the proportion has declined in milk, in butter it has not. In the first five years from 1877 the percentage reported against was 13·9; in the next five years 17·9; the next, 13·4. In 1892 it was 15·3 and in 1893, 13·7.—The Chairman: It is practically now about the same as it was in 1877. After the passing of the Margarine Act was there no difference?—Mr. Thomas: There was a sudden drop in 1888 from 19·5 to 10·4, but the figures have risen since. Some of the figures have been 11½, 15, and 14. In 1893 there were 794 samples reported against; 604 prosecutions were instituted, 29 cases were dismissed, in six the proceedings were withdrawn, in 18 the vendors had to pay costs, and in 551 penalties were inflicted amounting to £1,150 1s. 6d. There was one fine of £45, three of £20, three between £10 and £20, nine of £10, eight between £5 and £10, six of £5, and the others were smaller.—The Chairman: The mixture of margarine with butter has become very general?—Mr. Thomas: That has been the case in late years. On the one hand scientific knowledge has been brought to the aid of the adulterators as well as the analysts, and the act of producing as much water in butter as possible has been brought to a high point.—The Chairman: So that the adulterants are margarine and water?—Mr. Thomas: Yes; but they stand on a different level because, whereas margarine, which is a compound of fats, is an entirely foreign ingredient, water is a constituent of all butter. But in much of the butter we get there is both neglect to squeeze out the buttermilk and also an addition of water.—The witness could not say whether water was added to margarine or whether it affected the keeping power of butter.—The Chairman: We have no knowledge of margarine being injurious to health?—Mr. Thomas: That is so.

To be continued.





